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AUTHOR Cazden, Courtney B.; And Others
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ABSTRACT

The purpose of this project was to make a preliminary investigation of the processes of second language acquisition by children, adolescents and adults, and to develop a methodology appropriate to the study of second language learning. In the development of the methodology, applicable techniques from first language acquisition research were incorporated and new techniques appropriate specifically to second language acquisition were devised. The research examined the acquisition of English by six Spanish-speaking subjects over a ten-month period. Two subjects were at each of three target ages: 4-6, 11-14 and over 18. Each subject was visited approximately every two weeks and speech samples were recorded in three situations: spontaneous speech recordings, elicitations and pre-planned sociolinguistic interactions. The subjects were "free" second language learners with very little or no prior or current instruction in English. Thus they acquired their second language mainly by exposure to the English-speaking environment. The analysis focused on the acquisition of the English auxiliary and its related structures, the negative and interrogative. A clear developmental pattern was found for both the negative and interrogative. A highly variable order of acquisition was found for the appearance of auxiliaries. (Author)

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Second Language Acquisition Sequences in Children, Adolescents and Adults

Courtney B. Cazden
Herlinda Cancino
Ellen J. Rosansky
John H. Schumann

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FINAL REPORT

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SECOND LANGUAGE ACQUISITION SEQUENCES IN CHILDREN, ADOLESCENTS AND ADULTS

COURTNEY B. CAZDEN
HARVARD UNIVERSITY
CAMBRIDGE, MASS. 02138
with
HERLINDA CANCINO
ELLEN J. ROSANSKY
JOHN H. SCHUMANN

AUGUST 1, 1975

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U.S. DEPARTMENT OF
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Abstract

The purpose of this project was to make a preliminary investigation of the processes of second language acquisition by children, adolescents and adults, and to develop a methodology appropriate to the study of second language learning. In the development of the methodology, applicable techniques from first language acquisition research were incorporated and new techniques appropriate specifically to second language acquisition were devised.

The research examined the acquisition of English by six Spanish-speaking subjects over a ten-month period -- two subjects at each of three target ages: 4-6, 11-14 and over 18. Each subject was visited approximately every two weeks and speech samples were recorded in three situations: spontaneous speech recordings, elicitations and pre-planned socio-linguistic interactions. The subjects were "free" second language learners with very little or no prior or current instruction in English. Thus they acquired their second language mainly by exposure to the English-speaking environment.

The analysis focused on the acquisition of the English auxiliary and its related structures, the negative and interrogative. A clear developmental pattern was found for both the negative and interrogative. A highly variable order of acquisition was found for the appearance of auxiliaries.

Formal Language Acquisition Sequences in Children, Adolescents and Adults

Courtney B. Cazden
Harvard University
et al.
Merrill Swain
Eileen F. Kennedy
John H. Schumann

August 1, 1970

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of ungrammaticality does not apply to the second language learner. All utterances in the learner's idiosyncratic dialect (exclusive of performance errors) are therefore acceptable expressions of his own linguistic system. He asserts that longitudinal studies of the successive stages in development of this learner language are necessary in order to begin to understand the process of second language acquisition.

Nemser (1971) identifies the learner language as an "approximative system" which is defined as a structurally cohesive linguistic system distinct from both the source language and the target language. It is by definition transient and is gradually restructured in successive stages from initial through advanced learning. According to Nemser, the ultimate goal of the study of such systems would be the "accurate projection of the approximative system throughout its successive stages of development in each contact situation" (p. 123).

Selinker (1972) suggests that there is a latent psychological structure in the brain which is activated when one attempts to learn a second language, i.e., whenever one tries to produce a set of sentences in the second language using meanings one may already have. When such an attempt is made, the utterances which are realized are not identical to those which would have been produced by a native speaker of the target language. Nor are they identical to the sentences having the same meaning in the learner's native language. Thus a separate linguistic system is hypothesized to account for the actual realized utterances. This system is called "interlanguage". According to Selinker, the evidence for interlanguage is found in fossilizations which are forms, phonological, morphological and syntactic, in the speech of a speaker of a second language that do not conform to the target language norms even after years of instruction in and exposure to the standard forms.

Fossilizations are also those forms which, though absent from a learner's speech under normal conditions, tend to reappear in his linguistic performance when he is forced to deal with very difficult material, when he is in a state of anxiety, or when he is extremely relaxed. This systematic back-sliding of certain linguistic forms toward the interlanguage norms leads Selinker to hypothesize the psychological reality of fossilizations and interlanguages. The goal of a theory of second language learning, according to Selinker, would be to describe the knowledge underlying interlingual behavior and to predict the linguistic shapes (surface structures) of the utterances produced in the learner's successive interlingual systems.

All the theoretical work described above asserts that the language which the learner speaks is systematic. However, a weakness of this hypothesis is that it does not give a clear definition of what is meant by systematic. It is incumbent upon researchers in this field to evolve a workable definition of what would constitute a systematic interlanguage.

Schumann (1973) views the process of pidginization and creolization as models for adult second language acquisition. When the function of language is analysed into three components -- communication, affirmation of social identity, and expression verbal skill -- pidgins are seen as being functionally restricted to the first component -- communication. As a result, pidginization produces interlanguage which is simplified and reduced. When the function of the language of a second language learner is also restricted to communication (as is the usual case in the in the initial stages of learning), we can expect a learner's interlanguage to reflect some of the simplifications and reductions that are found in pidgins. In the process of creolization, the function of language extends to the integrative and expressive uses. Concomitant with this extension in function is the complication and expansion of the language structure. In a parallel fashion, when a second language learner attempts to mark his social identity within the target culture or to use his pidginized interlanguage for expressive purposes, we can expect his interlanguage to complicate and expand in ways similar to those fostered by creolization. Thus Schumann hypothesizes that the second language learning process will reflect the processes of pidginization and creolization. As with the notion of systematicity, the major problem with this hypothesis is that there are varied notions of what constitutes pidginization and creolization.

Dulay (1972), after reviewing the literature on native language interference in second language learning, proposes the "first language acquisition = second language acquisition hypothesis" (commonly referred to as the L1 = L2 hypothesis). This hypothesis asserts that children below the age of puberty will make errors in second language syntax that are similar to first language developmental errors and that they will not make errors that reflect transfer of the structure of their first language onto the second language they are learning.

Rosansky (1973, 1975) uses the work of Chomsky, Lenneberg and Piaget to discuss maturational limitations on second language learning. She finds strong evidence that second language acquisition after puberty may be qualitatively different from first language acquisition and that these differences may be related to the onset of Formal Operations,

the most advanced stage in Piaget's cognitive hierarchy that begins around puberty. Although the acquisition of a second language by older learners may be systematic and may even be governed by universal second language learning strategies, adults may well require specific instruction.

All of the literature described above is theoretical. It presents hypotheses about second language learning which are derived largely from theoretical work in related fields. Empirical research in second language acquisition that has actually been done is described in the following section.

Research in Second Language Acquisition.

Under the influence of the research in first language acquisition a few similar studies have been undertaken of second language acquisition. Ravem (1968, 1970) presents findings on the development of negation and wh- questions (what, when, where, why, who and how) in two Norwegian children acquiring English as a second language and relates them to similar studies of first language acquisition made by Roger Brown and associates. His conclusion is that there are some striking similarities between both processes. Dato (1970) studied the acquisition of Spanish by one four-year-old in a pilot study and then by four six-year-olds in a follow-up study. His findings indicate that second language learning follows a systematic pattern of development, that the learning of a second language may follow similar psycholinguistic rules within certain broad age limits, and that second language learning is similar to that of native language acquisition. Milon (1972) has examined the acquisition of negation in a six-month study of a seven-year-old Japanese child learning English. He reports that the types of negative utterances his subject produced were similar to those produced by children acquiring English as a native language. He concludes that children well below the age of puberty will acquire English in the same developmental order that native speakers acquire it, and he believes that these similarities in the developmental system of first and second language acquisition are due to language learning heuristics which may be universal.

Huang (1971) studied the acquisition of English syntax by a five-year-old Taiwanese boy. He identified two language learning strategies in his subject. The first involved learning well-formed sentences as unanalyzed units (e.g., "get out of here") and using them in appropriate situations. The second strategy involved joining two words with a pause or juncture between them (e.g., "This ++ kite"). Eventually

the two strategies appeared to merge. The subject did not appear to transfer his knowledge of Taiwanese syntax to the learning of English. Thus his language acquisition appears to support Dulay's L1 = L2 hypothesis.

Butterworth (1972) examined the acquisition of English by a 13-year-old native speaker of Spanish. This was the first study in the research literature of a learner older than ten years of age. Using a combination of experimental elicitation techniques and spontaneous speech collection, he found that this adolescent learner tended to employ two strategies in the acquisition of English. The first was to reduce English syntax to simpler structures; the second was to draw on Spanish syntax for communications which exceeded his knowledge of English syntax.

Hakuta (1973) in a one-year study of the acquisition of English by a five-year-old Japanese girl has analyzed the acquisition of certain grammatical morphemes and compared them with the acquisition order found by Brown (1973) in his studies of children learning English as a native language. Hakuta found that his subject's acquisition order differed in several respects from that described by Brown and attributed these differences to the advanced cognitive development of his subject and to the influence of her prior knowledge of Japanese.

Dulay and Burt (1974) using an elicitation device, The Bilingual Syntax Measure (BSM), conducted a large-scale cross-sectional study of the acquisition of English grammatical morphemes by both Chinese- and Spanish-speaking elementary school students. Their results showed a strikingly similar acquisition order for both groups of subjects. Madden, Bailey and Krashen (1974), also using the BSM, found a difficulty ordering for adult ESL students which was similar to that found by Burt and Dulay for children. Since it has not yet been shown that the BSM yields the same order of acquisition of grammatical morphemes for first language learners as the longitudinal studies of Roger Brown and others, it is unclear to what extent the similarities found among L2 learners from different ages and native languages may be artifacts of the BSM itself.*

Swain, Dumas and Naiman (1974) have investigated the use of elicited imitation and translation as shorthand methods of collecting second language data. They demonstrate that imitation assesses both comprehension and production skills,

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*Controversy over the validity of the BSM results for order of acquisition of individual morphemes in second language acquisition studies do not imply questions about its more widespread use in bilingual education programs as a global index of language growth.

and that translation from L2 to L1 taps second language comprehension skills while translation from L1 to L2 taps production skills.

These studies do throw some significant light on the second language learning process; however, except for the Butterworth study and the Madden, Bailey and Krashen study, they deal only with children and leave the questions about second language learning by adolescents and adults largely untouched.

Subjects

Our most important initial task was to find six subjects to find out criteria of age, current status as a recent immigrant whose native language was Spanish and willingness to learn English during the ten months stay as a "free learner", i.e., from natural conversations without the imposition of any structured English instruction.

On August 1, 1973 subject selection was begun. Our initial approach involved three steps: 1) An individual or organization was contacted by telephone and the project was explained. 2) On the same day, after the phone call, a short description of the study (see Appendix A) was sent to the person who had been contacted. The description included telephone numbers of two research team members. 3) If the person contacted did not call back within ten days to two weeks, we made a follow-up call to see if they had been able to locate any potential subjects.

The persons contacted during this stage of subject search were those working either in social organizations which serve the Spanish-speaking communities, or public school bilingual programs for the Spanish speaking. See Appendix B1 for the names of the people and organizations contacted.

This approach did not yield sufficient results. Therefore, a second approach was tried: personal visits were made to schools, agencies for the Spanish speaking and factories employing Spanish speaking workers. In this way, we were able to get the names of potential subjects. The names of schools, factories and agencies contacted at this stage can be found in Appendix B2.

However, it soon became obvious that it would take a long time to find six subjects in this way. Many people identified were suited for the study in terms of surface qualifications -- Spanish speakers with no previous or current English instruction. But often they were so isolated from English speaking contacts that it was unlikely that they would have adequate exposure to English during the ten-month period of our data collection; some people had been here for more than a year already without learning English. In addition, large families, poor health and inadequate housing would have made our research difficult. The lack of a telephone, for example, would have made it difficult to arrange or change appointments; and lack of space and privacy in the homes would make the collection of adequate speech samples impossible. In addition, and just as important, our research would have been an additional burden on already troubled lives.

Since we were not committed by our proposal to any exotic study criteria in subject selection, we began a third approach in the academic community when colleges and universities opened in mid-September. Here we hoped to find spouses and children of Spanish-speaking students or faculty. Contacts from this stage of the subject search can be found in Appendix C).

From the second and third approaches, we found six subjects: two adults, two adolescents and two children.

I. ADULT #1 (Alberto)

Age: 25
Sex: Male. Marital status: Single
Country of Origin: Costa Rica
Time in U.S. at onset of study: four months
Occupation: Polisher in a frame factory
Education: Through high school
Previous Exposure to English: Two or three hours a week while in high school
Instruction in English in U.S.: None
Ability in English at the onset of study: Knowledge of only a few words and phrases

II. Adult #2 (Dr Cruz)

Age: 35
Sex: Female. Marital status: Married, one child, 18 months old
Country of Origin: Peru
Time in U.S. at onset of study: Three months
Occupation: Housewife, babysitter; was an elementary school teacher in Peru
Education: University graduate, degree in public relations
Previous Exposure to English: Studied English in high school
Instruction in English in U.S.: None
Ability in English at the onset of study: Some passive knowledge of English, the absence of formal instruction in English grammar

III. Adolescent #1 (Jorge)

Age: 12
Sex: Male. Son of a Harvard University Graduate Student
Country of Origin: Colombia
Time in U.S. at onset of study: One month
Occupation: Junior high school student
Previous Exposure to English: Had exposure to English through a tutor in Colombia who came to his home and played games with him and his brothers in English. No formal instruction in English, however

[illegible]

Fig. [illegible] (Page [illegible])

[illegible]

Particular functions, a [illegible] framework [illegible] [illegible] [illegible]

[illegible]

12. Elicited reflexives.

The subject is shown two pictures. In one, a boy is washing himself; in the other he is washing a dog. The researcher verbally labels the pictures: "The boy washes the dog" and "The boy washes himself". With a new set of pictures, similarly constructed, the subject is asked to supply the reflexive form.

Pre-planned socio-linguistic interactions. A new technique for collecting speech samples that we worked on specifically for this research is the pre-planned socio-linguistic interaction (PPSI).

Examples are pre-arranged situations in which the subject agrees, for example, to come to a party or go out for dinner at a restaurant. The situation is natural although pre-arranged, and provides the opportunity for collecting specialized language (e.g., language related to ordering food in a restaurant). PPSIs facilitate questions and answers in the context of relaxed and congenial discussions. They differ from spontaneous conversations in being more structured by both the situation and the experimenter, yet are not as highly structured or specific as the experimental elicitations. Examples are:

1. Dinner at a restaurant. Ideally a third party accompanies the experimenter and subject and serves as a catalyst by asking questions and leading the general discussion. We tried this with most of our subjects and found it fruitful as a stimulator of conversation. Particularly with the adults, after a glass of wine or beer. With one of our adult subjects, a lunch at a French restaurant provoked a considerable number of questions -- a linguistic feature with which we were particularly concerned.
2. An afternoon at a museum with the subject, experimenter and a third party. Topics of discussion are built into the museum itself. Discussions are often directed toward the displays which are of interest to the subject. The subject is asked to explain certain exhibits to the experimenter or to the transcriber who accompanies the experimenter to the museum. In one particularly successful PPSI, one of the adolescents was taken to an aquarium. He knew a good deal about fish and gave quite an instructive lesson over ice cream following this visit.

See Table 1 below for the tape sessions which were PPSIs.

All speech samples were recorded by audio-tapes and field notes written on the scene and, less frequently, by video-tape recordings. Video-tapes are especially valuable

for collecting information on non-verbal aspects of second language learning. They yield such information as "talking with the hands", evidence of greater ease during subject's conversation in his native language, with other members of the family, etc., and information about the non-verbal "interaction" or subject and experimenter. Once into the study, however, we realized that video-tape analysis would be too time consuming and so, beyond the initial video-taped sessions, we used audio tapes only, and relied on the bilingual transcribers to make notes on situational variables and non-verbal aspects of the interaction.

Testing

The problem of testing is complicated, especially in bilingual settings. Particularly where attempts have been made to assess "intelligence" in bilinguals, much controversy has arisen. In spite of this, we had two reasons for wanting to test our subjects:

1. We wished to assess their cognitive development for the sake of cross-comparisons with their later language development because Rosansky (1972,1975) has hypothesized that second language acquisition will be different after adolescence and the onset of formal operations, regardless of whether there is neurophysiological evidence to support a critical period theory. Through David Pillemer we found a Piagetian test that is appropriate for all the cognitive stages (Feldman et al., 1974).
2. We wanted to assess the initial level of English competency of our subjects so that if one subject varied considerably from the others in his second language progress, we might be able to account for this variability.

Although we had attempted to obtain subjects who had not studied English formally, who were not currently receiving formal ESL instruction, and who were of similar background, important differences did exist among our subjects in their knowledge of English. None of the subjects was receiving formal instruction except the two adolescents, Juan and Jorge, who received an hour a week (which we considered to be minimal) consisting of reading second grade textbooks. However, at least one of the subjects, Dolores, was an avid reader. In particular, she enjoyed studying English grammar books! When selecting our subjects we inquired as to previous formal instruction and excluded many potential subjects who had had prior instruction. Nonetheless,

one of our subjects (Dolores) revealed only later, that she had read English grammar books, and received some formal instruction. We administered a then experimental version of the Bilingual Syntax Measure (BSM - Burt, Dulay and Hernandez Chavez, 1975) to the four older subjects. Unfortunately, the two children were not available when the BSM testing and scoring could be done.

The sessions when the Piaget test and the BSM were administered to each subject can be found in Table 1.

Piaget Test

The Colored Blocks Test (Feldman et al., 1974) was administered to five of the subjects for the purpose of assessing their cognitive "stage". The test was developed as a set of non-verbal procedures and materials to test for the presence of cognitive abilities central to each of the Piagetian stages. It was designed to capture in test format Piaget's description of the quality of thought characteristic of each stage. There are three advantages to Feldman's format:

1. The test environment is one where the materials are familiar;
2. The experimenter does not have to give complex verbal instructions; and
3. The subject does not have to respond verbally in major portions of the test.

The test consists of colored blocks in two sizes and, for one part of the test, a piece of cardboard with various combinations of the blocks represented on it. The subjects are first familiarized with the sizes, shapes, and colors of the blocks and then presented with a series of test items based on various combinations of the blocks. According to the authors, the test was developed to assess a number of operational abilities including:

1. the ability to infer a relationship from examples of that relationship;
2. the ability to construct another example of a relationship which is known;
3. the ability to evaluate and compare objects in terms of their dimensions; and
4. the ability to select a most appropriate object or response when the best object for responding is not available.

The test, while containing stages (Set I: pre-operations; Sets II and III: concrete operations; and Sets IV and V: formal operations), was not designed for the purpose of individual assessment. Heretofore the test has been used

only to make inferences about populations, and not the abilities of particular individuals. A precise criterion for whether an individual has attained a particular stage (in terms of the number of correct answers in a test section) has not been established. Therefore, the performance of each subject will be discussed in some detail.

The test was administered in English to all subjects but Cheo who was not available when the testing was done. The only person familiar with the test, David Pillemer, one of its developers, does not speak Spanish. We had to choose between taking advantage of his expertise with the test or trying to produce a Spanish translation and then train an inexperienced person to administer the test. Because the language in the test is simple and limited in scope, and the instructions are largely based on the blocks themselves, we retained the English version and the experienced tester. Each subject's test performance should therefore be considered a minimum ability level.

Subject 1, Marta (age 4 1/2)

Subject completed all the questions of set I correctly. She responded incorrectly to all the questions of section II. She responded correctly on the first question of set IV (which can be solved correctly by a non-rule-generated response and often is answered ocrrectly by subjects who answered sectionII questions and all subsequent questions incorrectly). She then responded incorrectly to the two training questions and the operational task (question 2, set IV) which followed. The test was discontinued at this point, since the remaining tasks require the ability to correctly answer preceding questions. Subject 1 demonstrated pre-operational abilities, but her performance on sections II and IV did not suggest that she has attained the stage of concrete operations.

Subject 2, Jorge (age 12)

Subject completed sections I and II without error. Subject missed all the questions of set III, which, like set II, is a concrete operational task. However, set III involves referring to a chart, the use of which requires a verbal explanation. Thus his poor performance on set III may be attributable to communication problems. Subject answered the set IV questions correctly, but when questioned about his response strategy appeared to be performing concretely. (Section IV tasks are ambiguous -- there is a possible concrete operational as well as formal operational strategy, both of which can result in a correct response). Finally, S responded incorrectly to all the set V tasks

(pure formal operational tasks). Subject demonstrated pre-operational and concrete operational abilities, and may be approaching the onset of formal operations (since he was successful on set IV tasks). However, his performance did not demonstrate the presence of complete formal operational ability.

Subject 3, Juan (age 11)

Subject performed correctly on the questions of sets I, II and IV. He answered three of the four set III questions correctly; his success on this task (the one that requires a verbal explanation) in comparison to subject 2 may be attributable to the fact that he seemed more proficient in speaking and understanding English rather than to more advanced cognitive development. In fact Juan was rated at Proficiency Level 4 and Jorge at Level 3 on the BSM which was administered at about the same time to both boys. Finally, subject answered only one of the three set V questions correctly. Subject demonstrated pre-operational and concrete operational abilities, and may be approaching the onset of formal operations (since he was successful on set IV questions). However, his performance did not demonstrate the presence of complete formal operational ability.

Subject 4, Dolores (age 25)

Subject answered every question on the test correctly with the exception of the last question of set IV (which she finally answered correctly after some confusion -- probably due to some extraneous factor such as lack of attention) and the last question of set V. Since the subject answered two of the three pure formal questions correctly, the experimenter followed set V by engaging the subject in a non-specific discussion concerning the nature of the set V questions. Three additional problems (structurally identical to the set V tasks) were then presented. Subject answered all correctly. Subject demonstrated mastery of pre-operational and concrete operational tasks. In addition, her performance on set V and additional similar questions suggested that she has formal operational abilities as well.

Subject 5, Alberto (age 33)

Subject answered every test question correctly with the exception of the last two questions of set V. Unlike Subject 4, Subject 5's ability to communicate in English was very much limited; thus, his failure on set V questions may be due to a lack of understanding of the task. Subject demonstrated pre-operational and concrete abilities and appears to be at the onset of formal operations. However, his performance on set V did not demonstrate complete formal operational ability.

Bilingual Syntax Measure (Description and Rationale)

The Bilingual Syntax Measure (BSM) was designed to determine the level of structural language development of the child. It was prepared for children in preschool through the third grade who have been exposed to English either at home or at school. Although it was designed for use with children, after discussions with the developers, we administered it to our adult and adolescent subjects.

The test has 32 syntax production items which are elicited through the use of six pictures. The decision to measure production and not comprehension is based on the assumption that the ability to produce a language follows the ability to comprehend that language. Thus if the child can produce an utterance appropriately, he must certainly be able to comprehend that structure. To elicit responses that are as spontaneous as possible, the test uses cartoon type pictures and the tester asks questions that require the subject to give thoughtful answers.

There are no "correct" answers to any question in terms of the content of the response. As long as the response is appropriate, the response is accepted and coded. For example, to the question "Why is he so fat?", either of the following responses are appropriate: "Because he eats too much" or "Because he doesn't exercise". Although the content of responses varies from child to child, certain grammatical features tend to remain constant (a third person present singular verb form in these examples). The responses are scored only for the presence or absence of these features.

In addition to a single scoring procedure usable by teachers, one designed for more technical research use is available. The scoring counts the semantic features that were expressed grammatically where and when they should be, depending on the child's response. Semantic features include agent, action, object, recipient, time, case, gender, number, etc.. One point is scored for each feature expressed.

Actual Child Response	Response Value	Well-Formed or "Developed" Version	Developed Value
Because he too fat 1 2 1 1	5	because he is 1 2 1 too fat 1 1	6

A ratio is then computed of the semantic features that were grammatically expressed (Response Value) and the semantic features that would be obligatory in the well-formed version of the structure (Developed Value). This ratio, 5/6 in the example above, is termed the Proficiency Score. This process is repeated for each appropriate response that the child gives. Finally the Proficiency Scores are converted to percentages and a range established in order to determine the Proficiency Level (from 1-5) of each subject. Appendix F details the Summary of Scores and Pointer Review for each object tested.

Dolores was tested at Tape I. Her Proficiency Score was 89% and her Proficiency Level was 5.

Juan was tested at Tape I. His Proficiency Score was 74% and his Proficiency Level was 4.

Jorge was tested at Tape I. His Proficiency Score was 63% with a Proficiency Level of 3.

Alberto was tested at Tape I. His Proficiency Score was 47% and his Proficiency Level was also Level 3.

Thus, early in our study, according to this measure, Dolores was at the highest level, Juan next, and Alberto and Jorge third.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Data Analysis

[illegible] the assumptions of the hypothesis test appropriate [illegible] the purpose of discussing the theory. The purpose of [illegible] is to determine [illegible] The first step is to [illegible] assumptions of [illegible] and list the assumptions [illegible] assumptions [illegible] [illegible] assumptions [illegible]

(1.2)(1.3) We don't [illegible]

[illegible] Page Problem 1, page 17 of the handout, and [illegible] as their guide.

We have categorized and classified the assumptions. After [illegible] to [illegible] [illegible] assumptions [illegible] [illegible] [illegible] [illegible] assumptions [illegible] [illegible] assumptions [illegible]

We [illegible]

In conclusion [illegible] [illegible] [illegible] [illegible]

[illegible]

(iii)

(iv)

(v)

(vi)

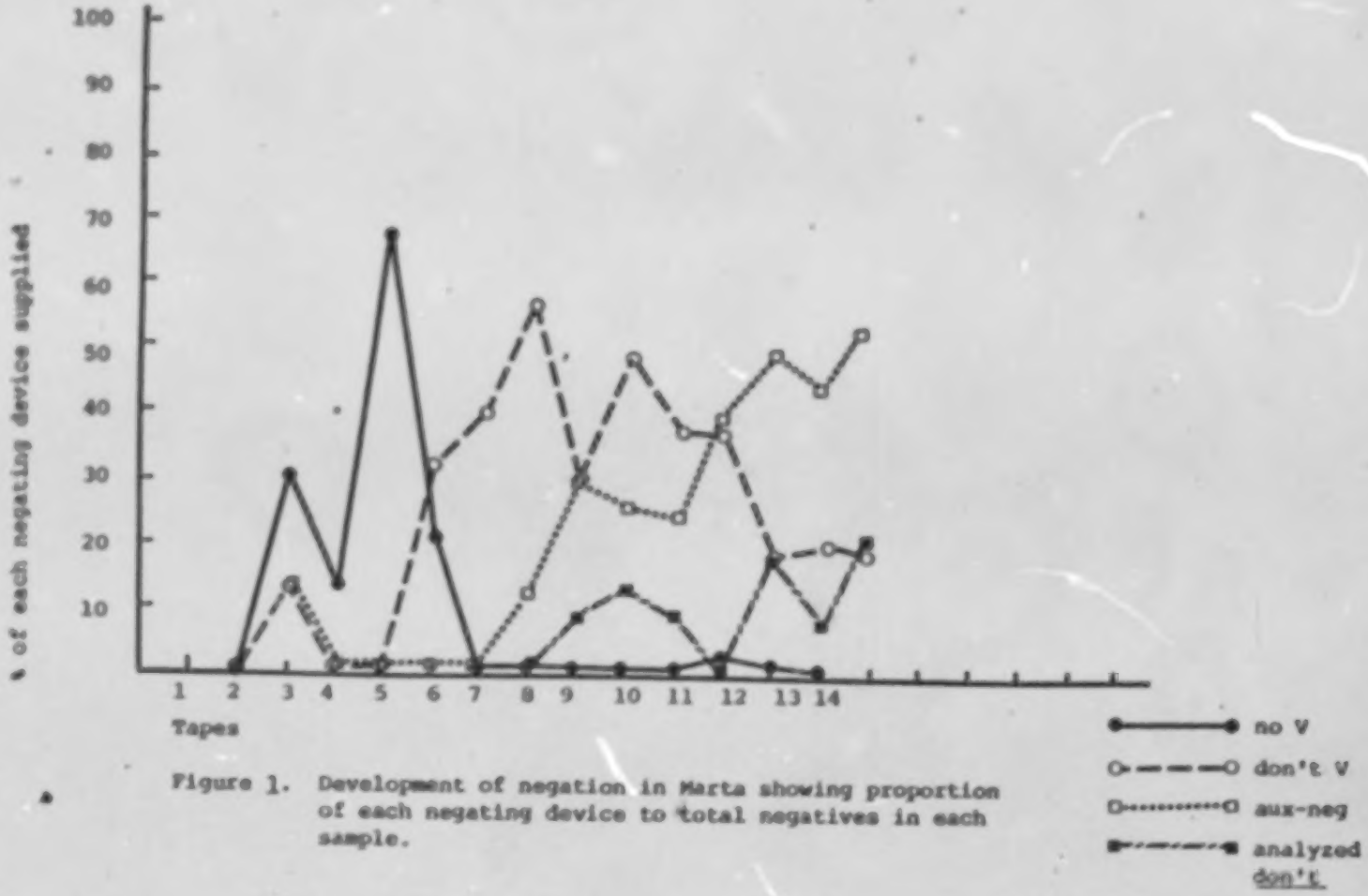


Figure 1. Development of negation in Marta showing proportion of each negating device to total negatives in each sample.

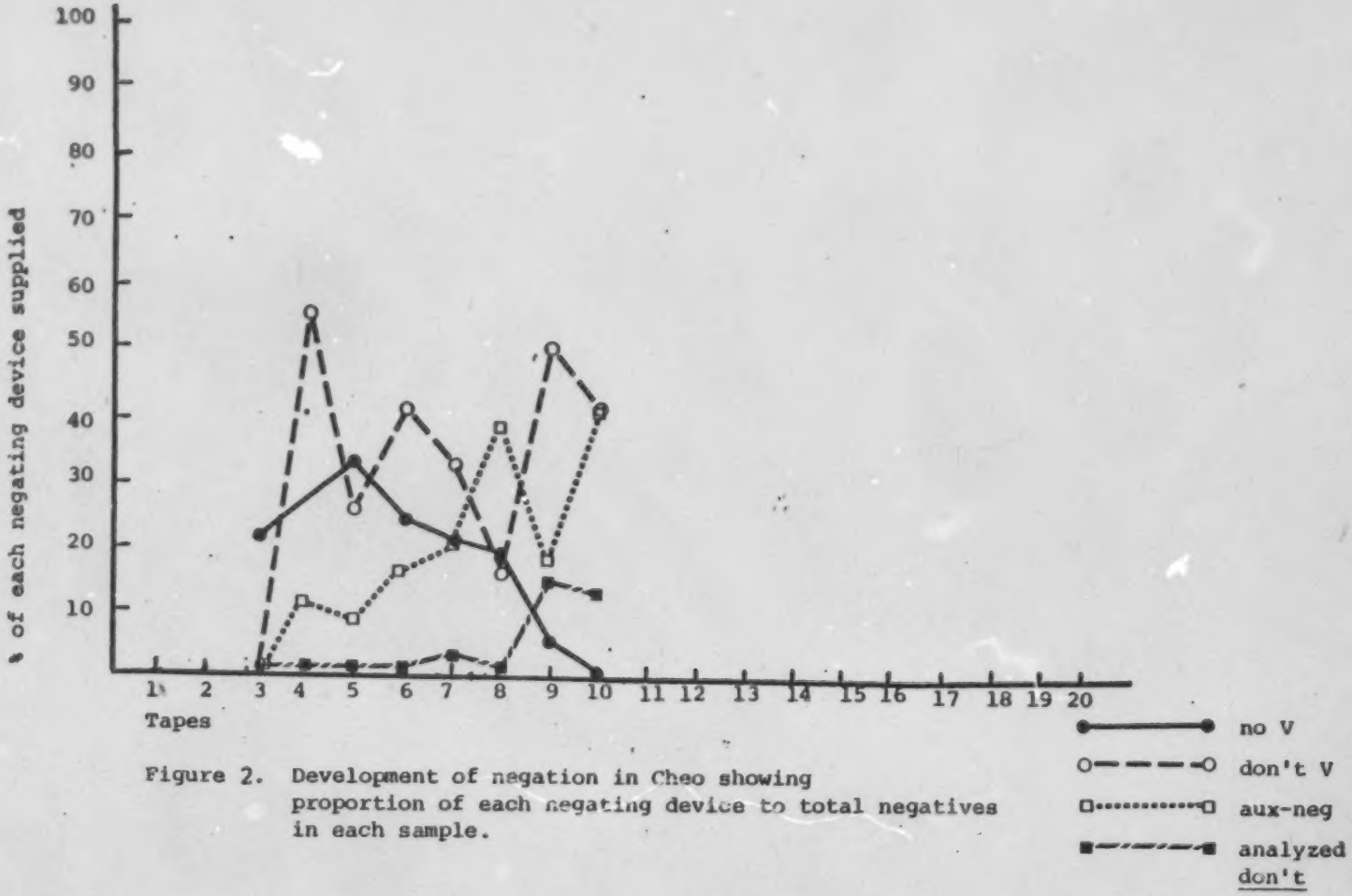


Figure 2. Development of negation in Cheo showing proportion of each negating device to total negatives in each sample.

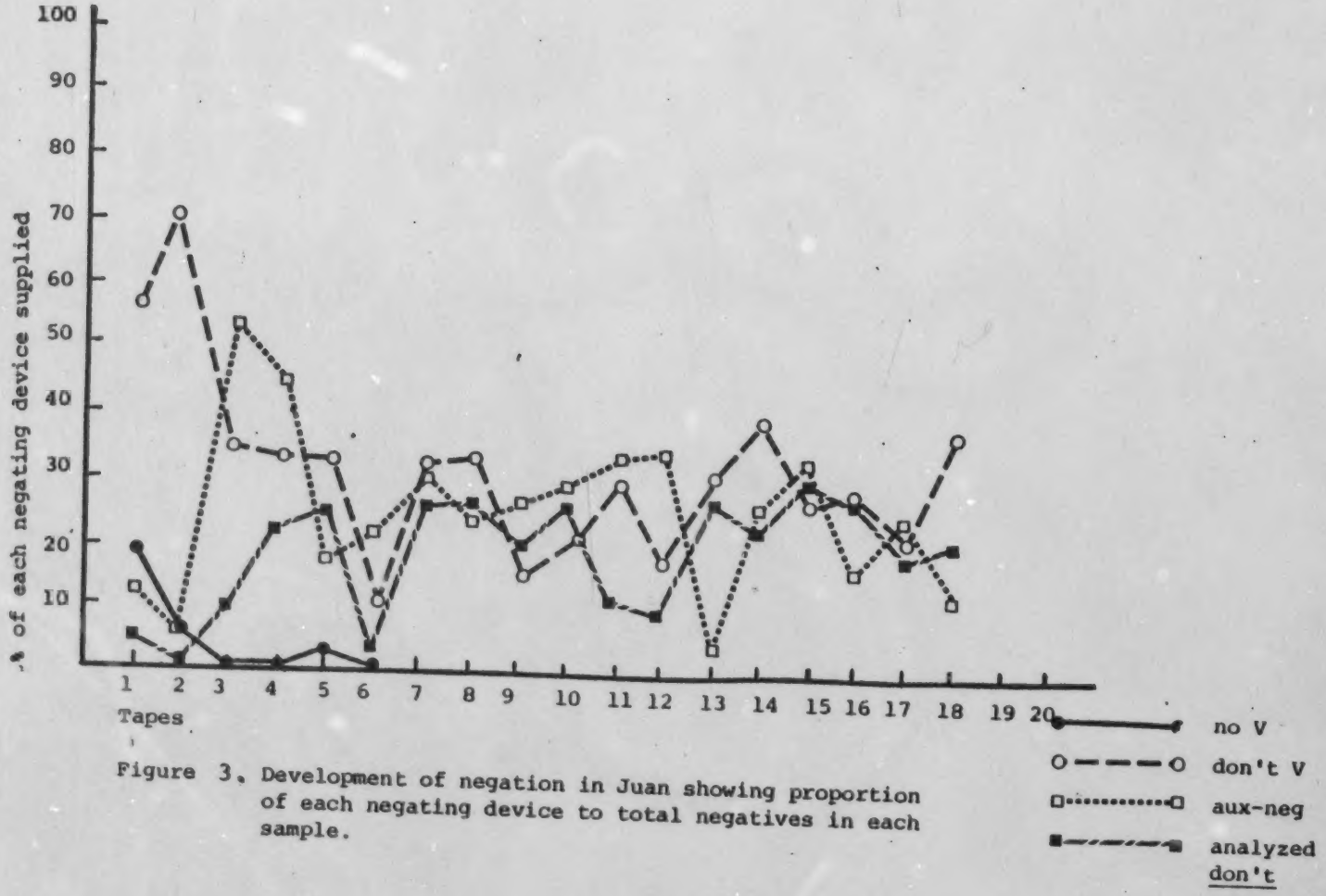


Figure 3. Development of negation in Juan showing proportion of each negating device to total negatives in each sample.

general, Juan progressed through the interim hypotheses rapidly and by tape 7 his negative is fully formed.

Jorge (fig. 4) clearly exhibits the no V, don't V, aux-neg, analyzed don't developmental sequence. Although no V and don't V appear simultaneously at tape 1, by tape 3 no V clearly dominates and is replaced by don't V in tape 7. Aux-neg becomes firmly established in tape 9 followed by analyzed don't in tape 12.

Alberto (fig. 5) seems to have two competing negation strategies throughout: no V and don't V. However, no V is obviously the more dominant of the two and consistently achieves a higher frequency until the last sample. His interlanguage can be characterized as pidginized (see Schumann, 1974, 1975).

Dolores (fig. 6) knew more English than the other subjects at the beginning of the study and therefore her graphs do not display early development. All that can be said is that her negatives are well formed.

The no V, don't V, aux-neg, analyzed don't sequence exhibited in our subjects' speech suggests that Spanish speakers' first hypothesis is that negation in English is like negation in Spanish, hence the learners place no in front of the verb. The learners' next hypothesis appears to be that the negator in English is not no, but don't, and don't is placed before the verb. At this point, one can argue that don't is simply an allomorph of no and that don't verb constructions are still essentially Spanish negation but with the negator slightly more anglicized. Then when the learners begin using aux-neg, and the analyzed forms of don't it would appear that they have learned that English negatives are formed by putting the negative article (n't, not) after the first auxiliary element. Interestingly, in Marta, Cheo, Juan and Jorge, the two children and two adolescents, no V is not only the first negating strategy but it does not disappear completely until the time that analyzed don't becomes firmly established.

It has been observed (Clyne 1975) that worker immigrants to Australia from various parts of Europe use no V constructions in English negation. It is not clear how long they retain this strategy, but the extent of its duration in the English of Spanish speakers may be due to two factors:
1. All learners of English, we theorize, quickly come to know that no is the general English negator.
2. Since no is the only Spanish negator, this form is transferred to the English of Spanish speakers.
Hence, it is only when a Spanish speaker's English is well developed that he will abandon this strategy entirely.

Figure 4. Development of repair in Xenopus showing proportion of each repairing device to total repair in each sample.

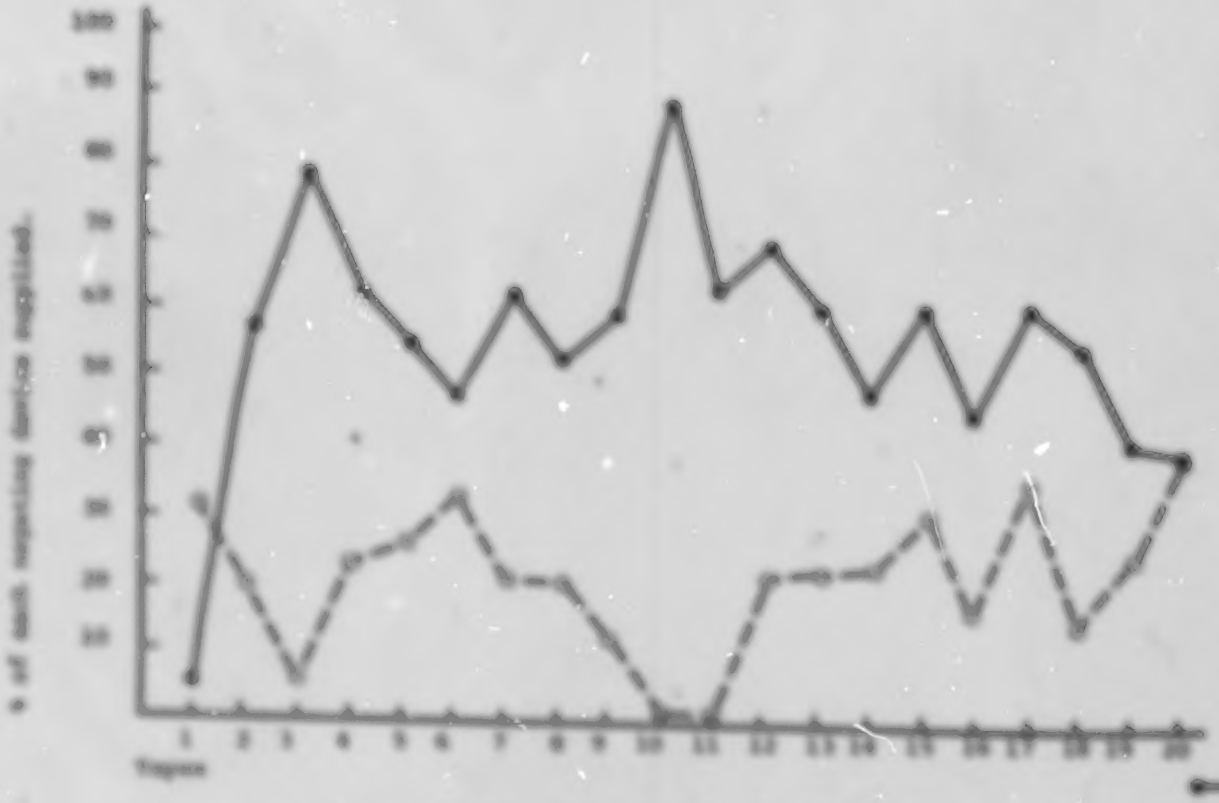


Figure 5. Development of negation in Alberto showing proportion of each negating device to total negatives in each sample.

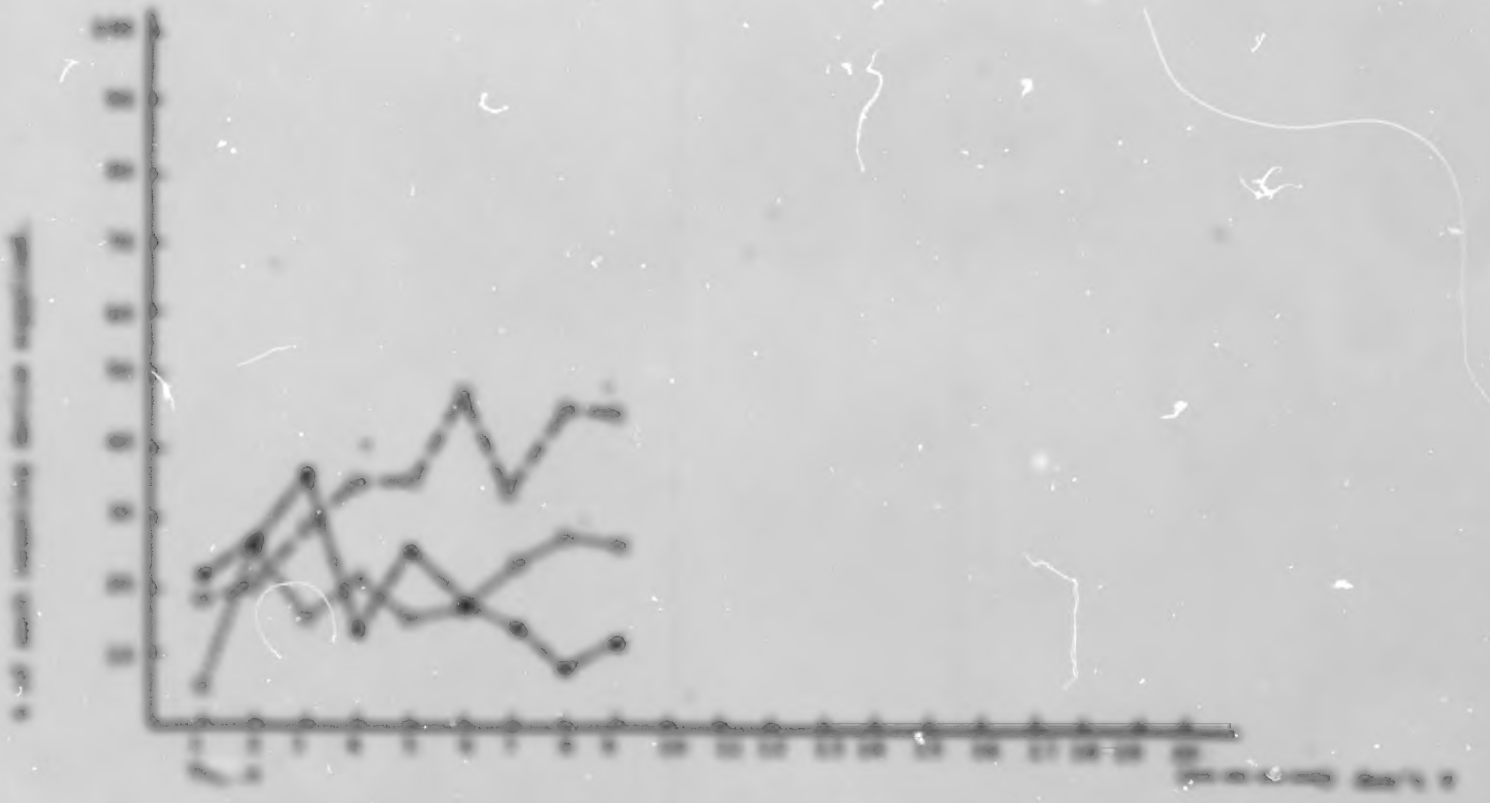


Figure 6. [illegible] of sessions in [illegible] showing proportion of each opening device to total sessions in each [illegible].

[illegible]

[illegible] the preceding analysis yields a [illegible]
[illegible] of imparting delicacy:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible] [illegible] [illegible]

[illegible]

[illegible] [illegible] [illegible] [

[illegible]

[illegible]

[illegible]

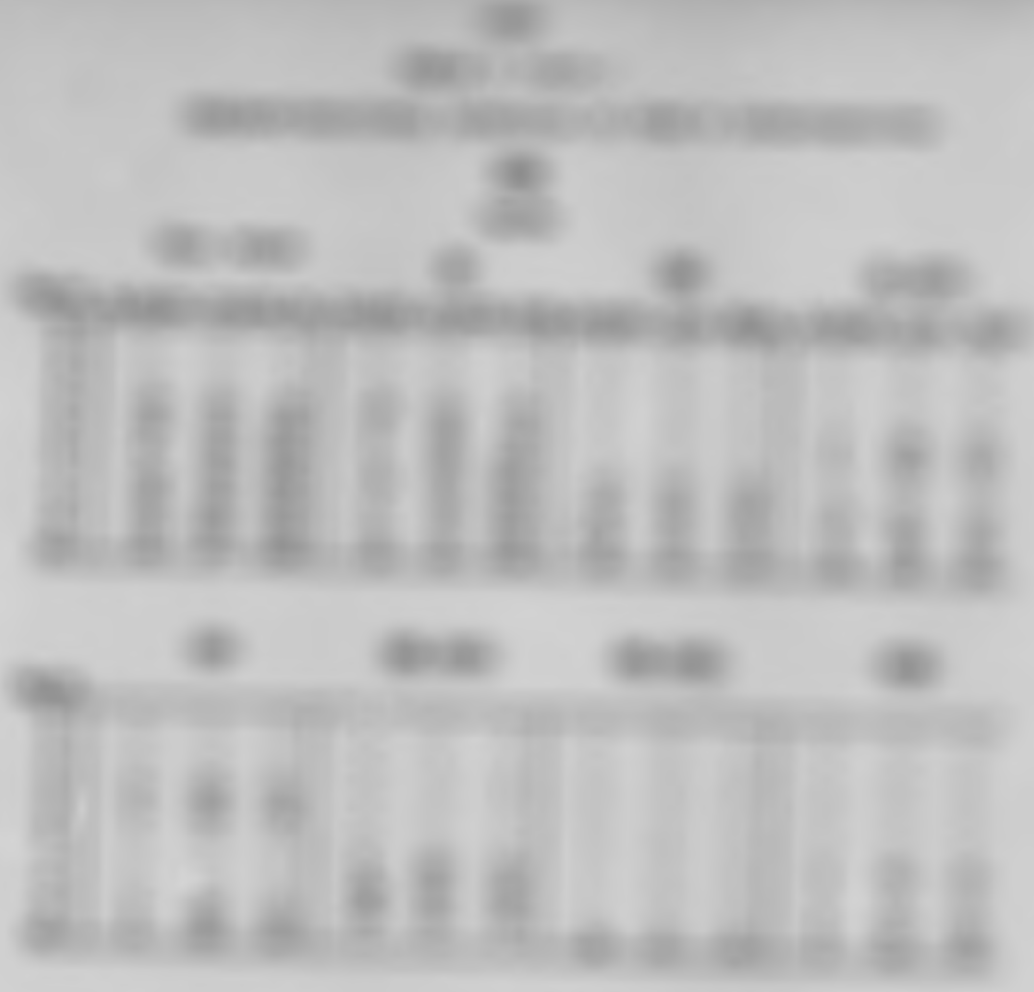


Table 4

Subject/auxiliary inversion in Juan's interrogatives

JUAN

Wh-Questions

Type/Age	DO			CAN			IS (COP)			DID			ARE (AUX)		
	% Corr	No Corr	Total	% Corr	No Corr	Total	% Corr	No Corr	Total	% Corr	No Corr	Total	% Corr	No Corr	Total
1	.94	(15)	(16)	1.00	(2)	(2)	-	-	-	1.00	(12)	(12)	-	-	-
2	.92	(22)	(24)	.50	(2)	(4)	-	-	-	1.00	(17)	(17)	1.00	(1)	(1)
3	.88	(15)	(17)	0	(0)	(2)	1.00	(1)	(1)	1.00	(13)	(13)	-	-	-
4	1.00	(4)	(4)	-	-	-	-	-	-	1.00	(4)	(4)	-	-	-
5	.92	(12)	(13)	.75	(3)	(4)	-	-	-	1.00	(4)	(4)	1.00	(4)	(4)
6	1.00	(6)	(6)	1.00	(2)	(2)	1.00	(1)	(1)	1.00	(3)	(3)	-	-	-
7	1.00	(4)	(4)	-	-	-	-	-	-	1.00	(4)	(4)	-	-	-
8	1.00	(14)	(14)	1.00	(7)	(7)	-	-	-	1.00	(8)	(8)	1.00	(2)	(2)
9	1.00	(8)	(8)	1.00	(3)	(3)	-	-	-	1.00	(2)	(2)	-	-	-
10	1.00	(6)	(6)	1.00	(1)	(1)	-	-	-	1.00	(3)	(3)	-	-	-
11	1.00	(4)	(4)	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)
12	1.00	(1)	(1)	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-
13	1.00	(4)	(4)	-	-	-	-	-	-	1.00	(1)	(1)	1.00	(3)	(3)
14	.97	(32)	(33)	1.00	(6)	(6)	0	(0)	(1)	1.00	(10)	(10)	1.00	(5)	(5)
15	.98	(40)	(41)	1.00	(10)	(10)	1.00	(1)	(1)	.92	(11)	(12)	1.00	(3)	(3)
16	97	(32)	(7)	1.00	(4)	(4)	1.00	(1)	(1)	1.00	(12)	(12)	1.00	(1)	(1)
17	1.00	(7)	(7)	1.00	(1)	(1)	-	-	-	1.00	(2)	(2)	-	-	-
18	1.00	(15)	(15)	1.00	(5)	(5)	-	-	-	1.00	(3)	(3)	1.00	(1)	(1)

Type/Age	ARE (COP)			DOES			IS (AUX)			WERE			SHOULD			AM (COP)			AM (AUX)		
1	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-
2	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	1.00	(2)	(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	1.00	(1)	(1)	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	1.00	(1)	(1)	1.00	(6)	(6)	-	-	-	1.00	(3)	(3)	-	-	-	-	-	-
15	1.00	(2)	(2)	1.00	(3)	(3)	1.00	(1)	(1)	1.00	(2)	(2)	1.00	(2)	(2)	1.00	(1)	(1)	.50	(1)	(2)
16	1.00	(2)	(2)	1.00	(1)	(1)	1.00	(3)	(3)	1.00	(2)	(2)	1.00	(2)	(2)	-	-	-	-	-	-
17	-	-	-	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)	-	-	-	-	-	-	1.00	(1)	(1)
18	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-

Table 4 (cont.)

Subject/auxiliary inversion in Juan's interrogatives

JUAN

Yes/No

Sess. No.	TOTAL Yes/No: % Inverted	No	Possible	DO: % Inv	No Inv	Possible	CAN: % Inv	No Inverted	Neg	IS (COP): % Inv	No Inv	Possible	DID: % Inv	No Inv	Possible	ARE (AUX): % Inv	No Inv	Poss
1	.33	(1)	(3)	0	(0)	(1)	-	-	-	.50	(1)	(2)	-	-	-	-	-	-
2	.50	(2)	(4)	1.00	(1)	(1)	1.00	(1)	(1)	0	(0)	(2)	-	-	-	-	-	-
3	.14	(1)	(7)	0	(0)	(3)	-	-	-	.50	(1)	(2)	0	(0)	(1)	-	-	-
4	0	(0)	(5)	0	(0)	(1)	0	(0)	(1)	0	(0)	(1)	-	-	-	-	-	-
5	.50	(4)	(8)	.50	(2)	(4)	-	-	-	0	(0)	(1)	1.00	(2)	(2)	-	-	-
6	.31	(4)	(13)	.33	(2)	(6)	.16	(1)	(6)	-	-	-	1.00	(1)	(1)	-	-	-
7	.40	(2)	(5)	0	(0)	(1)	0	(0)	(1)	0	(0)	(1)	-	-	-	-	-	-
8	.43	(3)	(7)	.50	(1)	(2)	-	-	-	0	(0)	(3)	1.00	(1)	(1)	-	-	-
9	.25	(2)	(8)	1.00	(1)	(1)	-	-	-	.33	(1)	(3)	-	-	-	0	(0)	(3)
10	1.00	(3)	(3)	-	-	-	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)	-	-	-
11	.75	(6)	(8)	1.00	(4)	(4)	-	-	-	-	-	-	.50	(1)	(2)	1.00	(1)	(1)
12	.74	(25)	(34)	.33	(1)	(3)	.50	(2)	(4)	.88	(22)	(25)	-	-	-	-	-	-
13	.40	(2)	(5)	0	(0)	(2)	-	-	-	1.00	(2)	(2)	-	-	-	-	-	-
14	.66	(8)	(12)	0	(0)	(1)	1.00	(1)	(1)	.75	(3)	(4)	.33	(1)	(3)	-	-	-
15	.71	(36)	(51)	.70	(14)	(20)	1.00	(4)	(4)	.70	(12)	(18)	1.00	(1)	(1)	1.00	(1)	(1)
16	.47	(9)	(19)	.50	(2)	(4)	1.00	(1)	(1)	.60	(3)	(5)	0	(0)	(3)	1.00	(1)	(1)
17	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	0	(0)	(1)	0	(0)	(1)	-	-	-	-	-	-	-	-	-	-	-	-

Sess. No.	ARE (COP)			DOES			IS (AUX)			WAS			WILL			WERE			COULD		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	0	(0)	(1)	-	-	-	-	-	-	-	-	-
4	0	(0)	(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	(0)	(1)	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	(1)	(1)
9	-	-	-	-	-	-	0	(0)	(1)	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-	-
11	0	(0)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	(0)	(2)
13	0	(0)	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	1.00	(2)	(2)	-	-	-	-	-	-
15	0	(0)	(1)	1.00	(2)	(2)	-	-	-	-	-	-	-	-	-	0	(0)	(1)	-	-	-
16	.67	(2)	(3)	0	(0)	(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5

Subject/auxiliary inversion in Jorge's interrogatives

JORGE

Wh-Questions

Tape No	TOTAL wh			DO			CAN			IS (COP)			DID		
	% Inverted	No Inv.	Poss.	% Inv.	No. Inverted	Possible	% Inv.	No Inv.	Possible	% Inv.	No Inverted	Poss.	% Inv.	No. Inverted	Poss
1	1.00	(4)	(4)	-	-	-	-	-	-	1.00	(4)	(4)	-	-	-
2	.50	(1)	(2)	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-
3	.25	(1)	(4)	0	(0)	(3)	-	-	-	1.00	(1)	(1)	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	.66	(2)	(3)	1.00	(2)	(2)	-	-	-	0	(0)	(1)	-	-	-
6	1.00	(1)	(1)	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-
7	.33	(1)	(3)	.33	(1)	(3)	-	-	-	-	-	-	-	-	-
8	1.00	(5)	(5)	1.00	(1)	(1)	1.00	(1)	(1)	1.00	(3)	(3)	-	-	-
9	.80	(4)	(5)	0	(0)	(1)	-	-	-	1.00	(3)	(3)	-	-	-
10	.60	(6)	(10)	0	(0)	(1)	-	-	-	1.00	(3)	(3)	-	-	-
11	.88	(7)	(8)	1.00	(4)	(4)	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)
12	.90	(10)	(11)	1.00	(7)	(7)	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)
13	.80	(4)	(5)	-	-	-	-	-	-	1.00	(3)	(3)	1.00	(1)	(1)
14	1.00	(19)	(19)	1.00	(14)	(14)	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)
15	.52	(11)	(21)	1.00	(6)	(6)	-	-	-	1.00	(2)	(2)	.66	(2)	(3)
16	1.00	(4)	(4)	1.00	(2)	(2)	-	-	-	1.00	(1)	(1)	-	-	-
17	.95	(20)	(21)	1.00	(7)	(7)	1.00	(6)	(6)	1.00	(6)	(6)	0	(0)	(1)
18	.86	(19)	(22)	.82	(9)	(11)	1.00	(1)	(1)	1.00	(6)	(6)	-	-	-
19	.87	(13)	(15)	.86	(6)	(7)	-	-	-	1.00	(4)	(4)	1.00	(1)	(1)
20	1.00	(11)	(11)	1.00	(2)	(2)	-	-	-	1.00	(5)	(5)	-	-	-

Tape No	ARE (AUX)			ARE (COP)			DOES			IS (AUX)			WILL		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	0	(0)	(1)	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	.50	(1)	(2)	-	-	-	1.00	(2)	(2)	0	(0)	(1)	-	-	-
11	1.00	(1)	(1)	-	-	-	-	-	-	0	(0)	(1)	-	-	-
12	-	-	-	-	-	-	.50	(1)	(2)	-	-	-	-	-	-
13	-	-	-	-	-	-	0	(0)	(1)	-	-	-	-	-	-
14	-	-	-	1.00	(2)	(2)	1.00	(1)	(1)	-	-	-	-	-	-
15	-	-	-	-	-	-	0	(0)	(2)	.25	(1)	(4)	0	(0)	(4)
16	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-
18	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)	0	(0)	(1)	-	-	-
19	0	(0)	(1)	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)	-	-	-
20	-	-	-	1.00	(2)	(2)	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)

Table 5 (cont.)

Subject/auxiliary inversion in Jorge's interrogatives

JORGE

Yes/No

Type No.	TOTAL YES/NO			DO			CAN			IS (COP)			DID		
	% Inverted	No Inv	Poss	% Inverted	No Inv	Poss	% Inverted	No Inv	Poss	% Inverted	No Inv	Poss	% Inverted	No Inv	Poss
1	0	(0)	(0)	-	-	-	-	-	-	0	(0)	(4)	0	(0)	(1)
2	.60	(3)	(5)	.75	(3)	(4)	-	-	-	0	(0)	(1)	-	-	-
3	.44	(4)	(9)	.57	(4)	(7)	-	-	-	0	(0)	(1)	-	-	-
4	0	(0)	(3)	0	(0)	(1)	-	-	-	0	(0)	(1)	-	-	-
5	.25	(1)	(4)	.33	(1)	(3)	-	-	-	0	(0)	(1)	-	-	-
6	0	(0)	(3)	0	(0)	(1)	0	(0)	(2)	-	-	-	-	-	-
7	.60	(3)	(5)	.75	(3)	(4)	-	-	-	-	-	-	0	(0)	(1)
8	0	(0)	(1)	-	-	-	-	-	-	-	-	-	-	-	-
9	0	(0)	(16)	0	(0)	(3)	0	(0)	(1)	0	(0)	(12)	-	-	-
10	.28	(5)	(19)	.45	(5)	(11)	0	(0)	(4)	0	(0)	(1)	0	(0)	(1)
11	.43	(3)	(8)	.60	(3)	(5)	0	(0)	(2)	-	-	-	0	(0)	(1)
12	.36	(15)	(41)	.27	(3)	(11)	.89	(8)	(9)	.07	(1)	(14)	-	-	-
13	.50	(2)	(4)	0	(0)	(2)	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)
14	.15	(2)	(13)	.20	(1)	(5)	1.00	(1)	(1)	0	(0)	(9)	0	(0)	(2)
15	.53	(8)	(15)	.17	(1)	(6)	1.00	(5)	(5)	.50	(1)	(2)	1.00	(1)	(1)
16	.33	(4)	(12)	.17	(1)	(6)	1.00	(2)	(2)	-	-	-	0	(0)	(1)
17	.58	(7)	(12)	.25	(1)	(4)	1.00	(3)	(3)	0	(0)	(1)	-	-	-
18	.67	(12)	(18)	.71	(5)	(7)	.50	(1)	(2)	1.00	(3)	(3)	.50	(2)	(4)
19	.57	(4)	(7)	.33	(1)	(3)	-	-	-	.50	(1)	(2)	-	-	-
20	.50	(4)	(8)	0	(0)	(1)	-	-	-	0	(0)	(1)	-	-	-

Type No.	ARE (AUX)			IS (AUX)			WAS (AUX)			WILL			HAVE		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	0	(0)	(1)
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	0	(0)	(1)	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	0	(0)	(1)	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	1.00	(1)	(1)	-	-	-	0	(0)	(2)	0	(0)	(1)	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	0	(0)	(1)	-	-	-	-	-	-
16	1.00	(2)	(2)	-	-	-	0	(0)	(1)	0	(0)	(1)	-	-	-
17	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)
18	-	-	-	1.00	(1)	(1)	0	(0)	(1)	-	-	-	-	-	-
19	1.00	(1)	(1)	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-
20	1.00	(3)	(3)	1.00	(1)	(1)	-	-	-	0	(0)	(2)	-	-	-

Table 6

Subject/auxiliary inversion in Dolores' interrogatives

[illegible]

Wh-Questions

Target Obl.	[illegible]			DO			COP			IS (COP)		
1	.69	(9)	(13)	.50	(1)	(2)	-	-	-	.66	(4)	(6)
2	.86	(25)	(29)	.93	(13)	(14)	-	-	-	.88	(7)	(8)
3	.81	(34)	(42)	.91	(20)	(22)	-	-	-	.75	(9)	(12)
4	.57	(13)	(23)	.44	(7)	(16)	1.00	(1)	(1)	1.00	(2)	(2)
5	.71	(68)	(96)	.45	(20)	(44)	0	(0)	(1)	.94	(30)	(32)
6	.61	(11)	(18)	.38	(3)	(8)	1.00	(1)	(1)	1.00	(4)	(4)
7	.71	(36)	(51)	.46	(12)	(26)	-	-	-	1.00	(10)	(10)
8	.50	(15)	(30)	.33	(4)	(12)	-	-	-	1.00	(8)	(8)
9	.66	(20)	(32)	.43	(7)	(11)	1.00	(1)	(1)	1.00	(12)	(12)

Target Obl.	DID			ARE (PAST)			ARE (COP)			WERE		
1	1.00	(1)	(1)	1.00	(1)	(1)	-	-	-	-	-	-
2	-	-	-	.50	(1)	(2)	1.00	(3)	(3)	.00	(1)	(2)
3	1.00	(1)	(1)	1.00	(2)	(2)	.33	(1)	(3)	-	-	-
4	-	-	-	-	-	-	-	-	-	1.00	(1)	(1)
5	1.00	(2)	(2)	1.00	(10)	(10)	1.00	(4)	(4)	0	(0)	(1)
6	.50	(1)	(2)	0	(0)	(1)	1.00	(1)	(1)	-	-	-
7	1.00	(1)	(1)	.86	(6)	(7)	1.00	(2)	(2)	1.00	(1)	(1)
8	0	(0)	(2)	-	-	-	.50	(1)	(2)	-	-	-
9	-	-	-	1.00	(7)	(7)	-	-	-	-	-	-

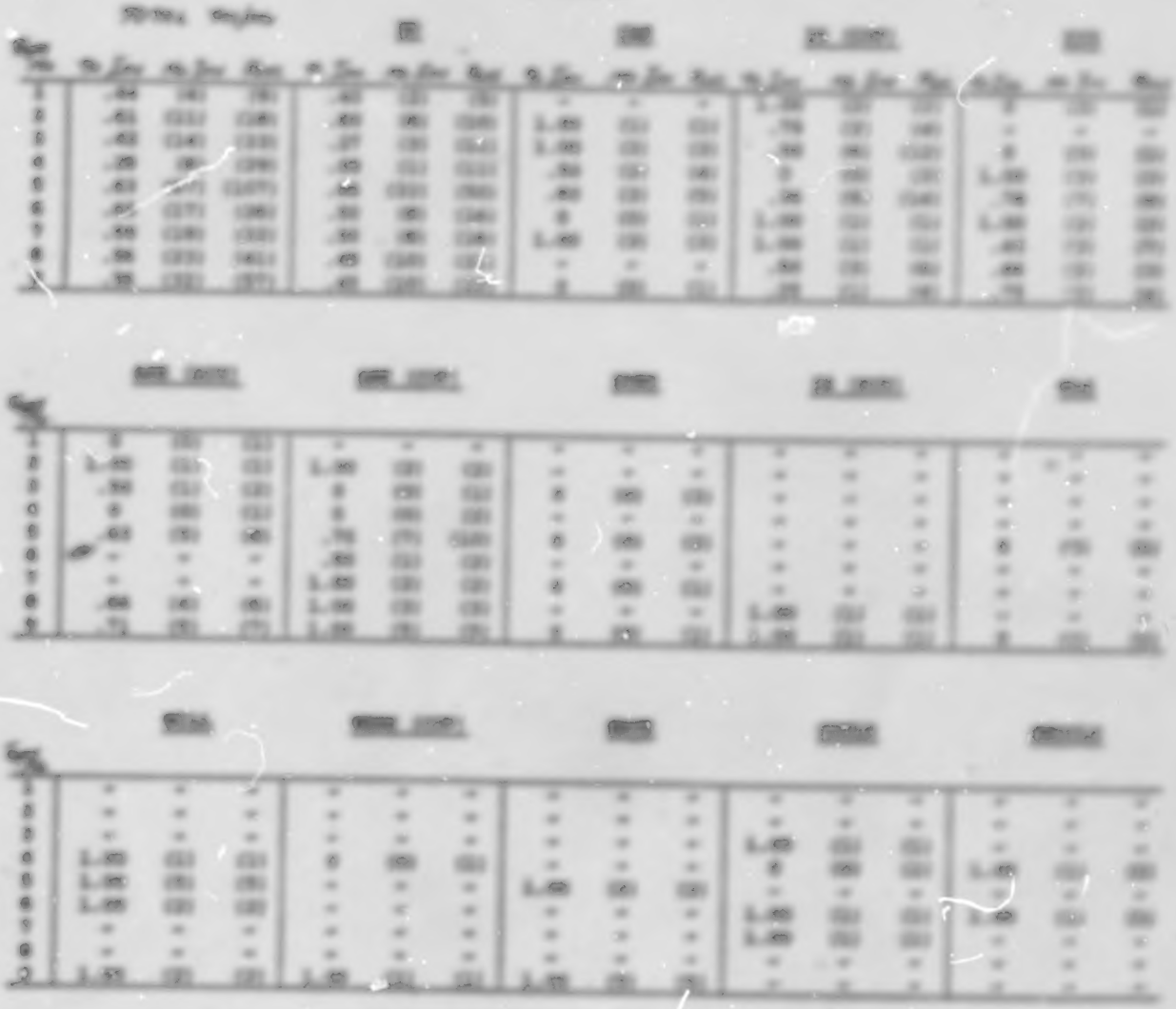
Target Obl.	WAS (COP)			DOES			DOING			AM (COP)		
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	1.00	(1)	(1)	-	-	-	-	-	-	0	(0)	(1)
4	1.00	(1)	(1)	-	-	-	1.00	(2)	(2)	-	-	-
5	-	-	-	1.00	(1)	(1)	1.00	(1)	(1)	0	(0)	(1)
6	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-
7	1.00	(1)	(1)	-	-	-	-	-	-	-	-	-
8	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-
9	-	-	-	1.00	(1)	(1)	-	-	-	-	-	-

Table 6 (cont.)

- Subject/auxiliary inversion in Dutroux' interrogatives

[illegible]

[illegible]



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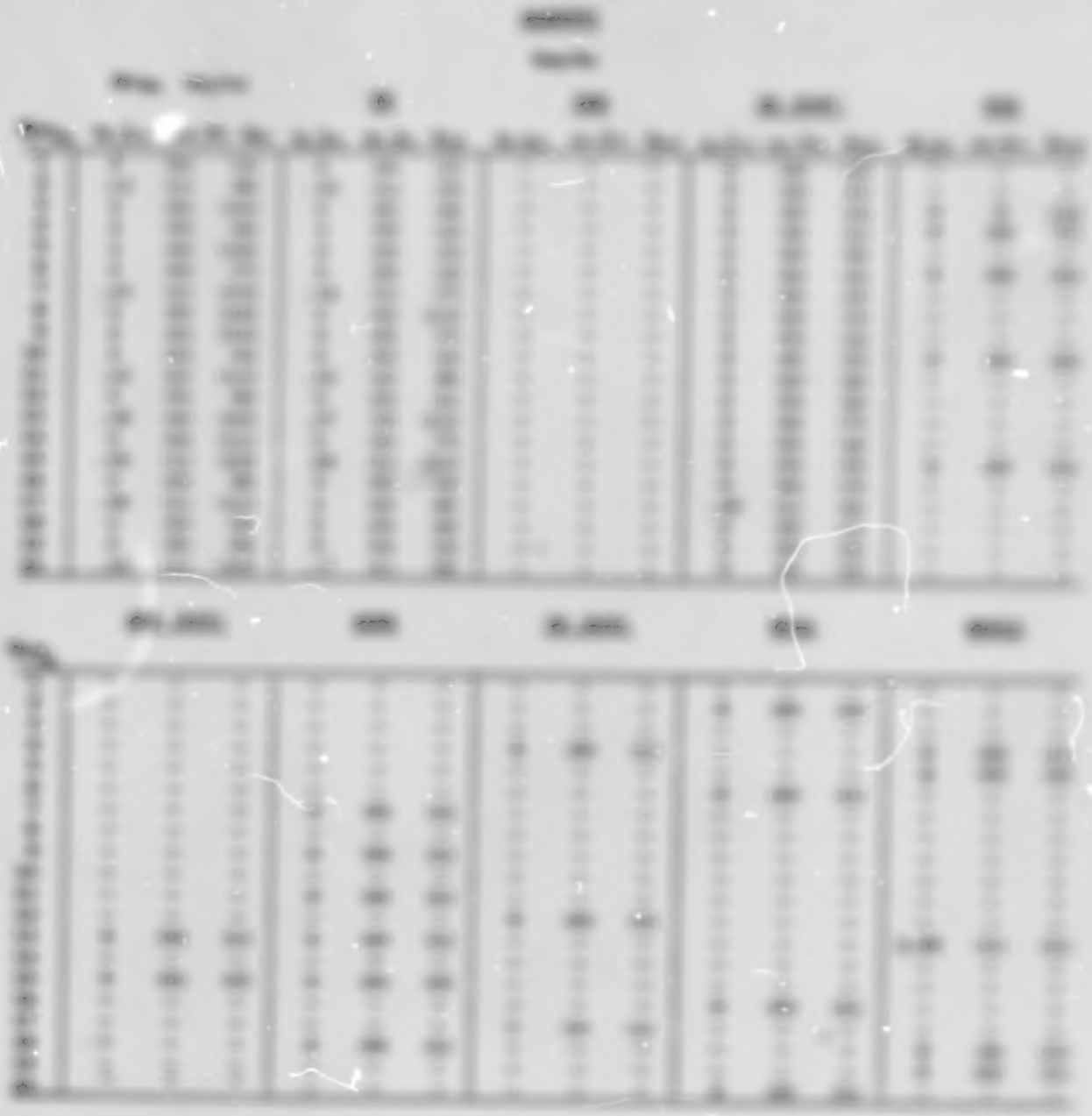

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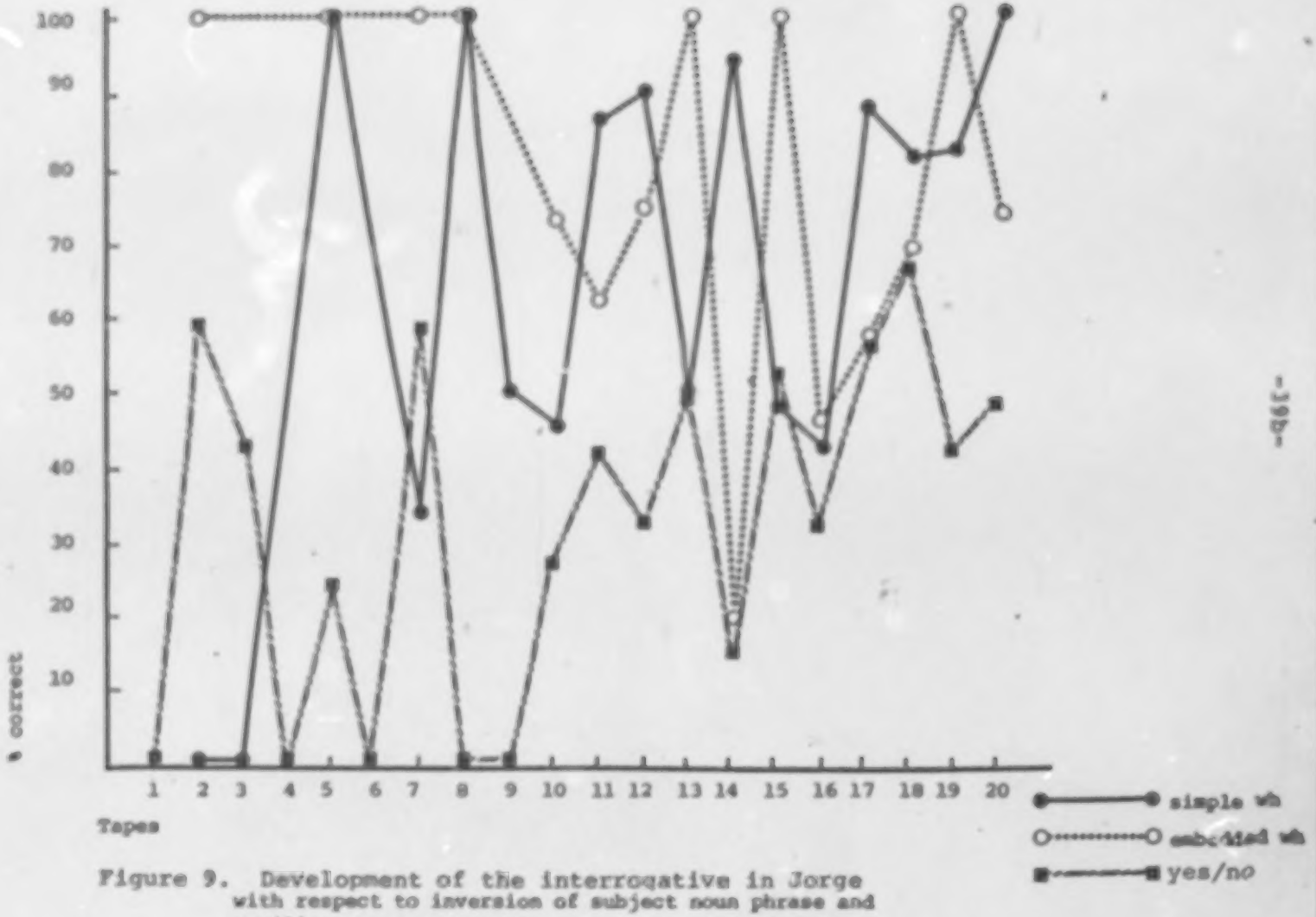


Figure 9. Development of the interrogative in Jorge with respect to inversion of subject noun phrase and auxiliary.

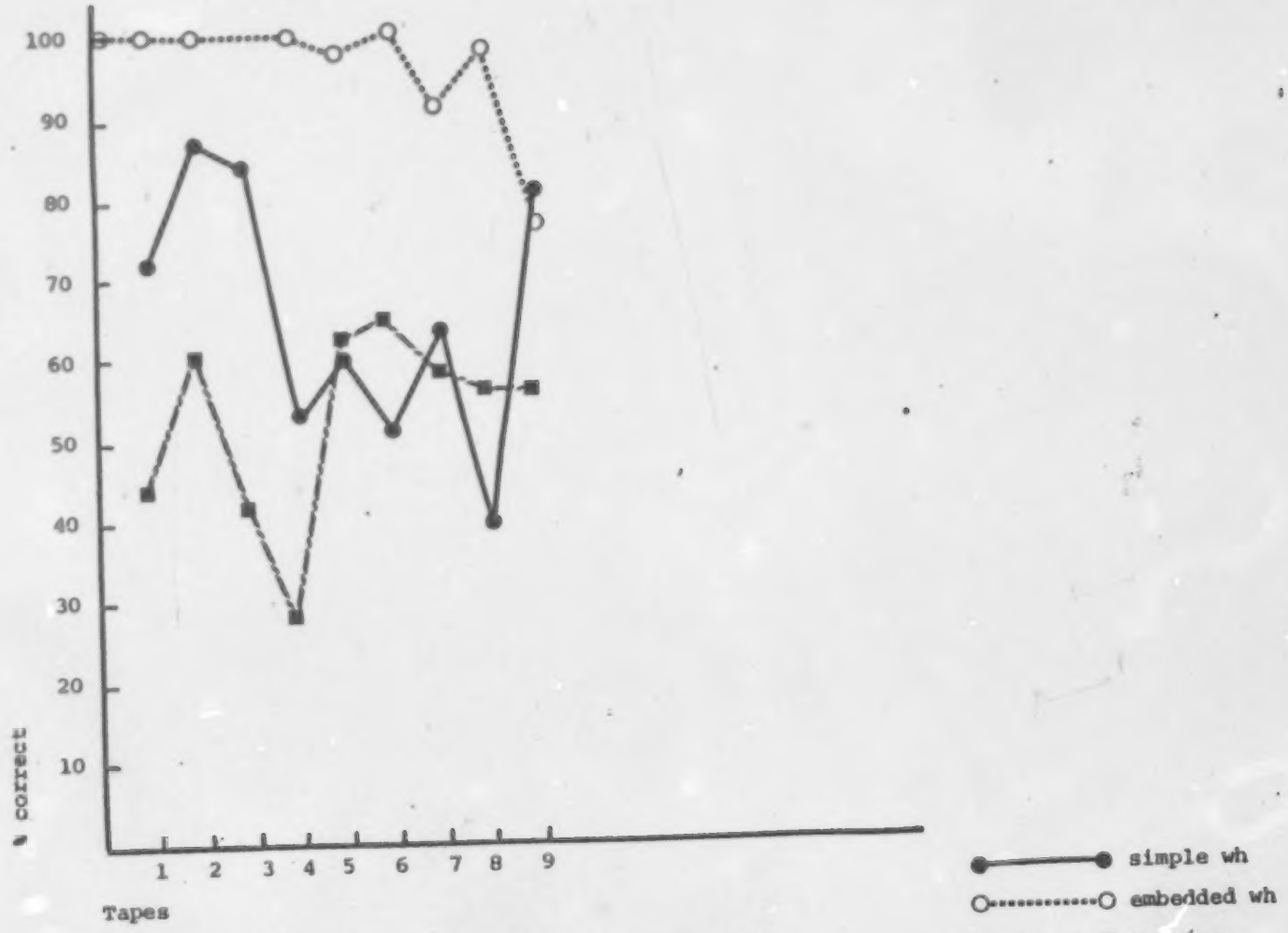


Figure 10. Development of the interrogative in Dolores with respect to inversion of subject noun phrase and auxiliary.

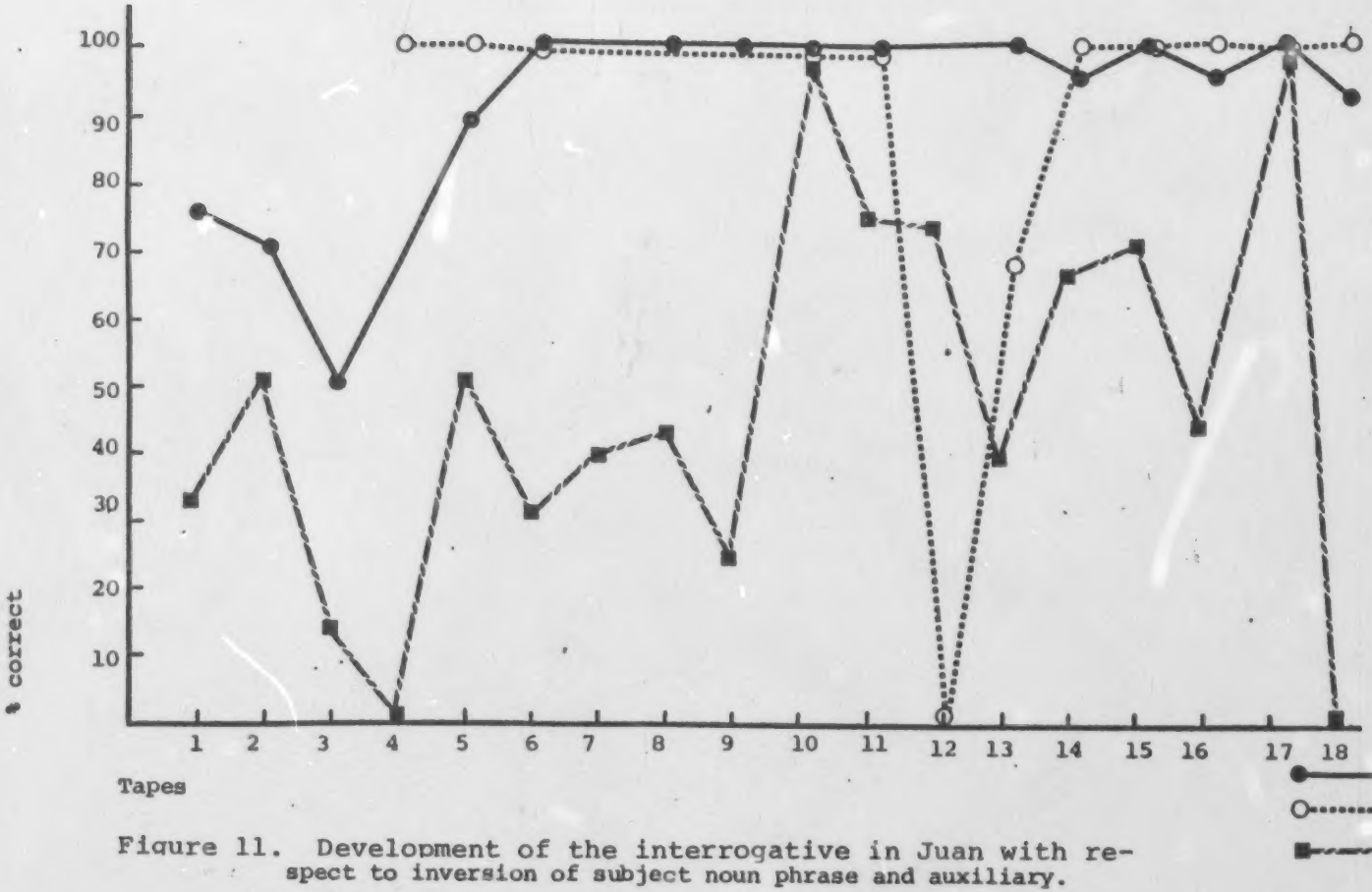


Figure 11. Development of the interrogative in Juan with respect to inversion of subject noun phrase and auxiliary.

i) In the first stage there is no inversion (i.e., sentence with rising intonation);

ii) in the second period there is some inversion gradually increasing, but with variability.

In conclusion, the foregoing analysis yields several important points:

1. is (cop) wh- questions behave differently than do other auxiliaries. They do not involve inversion and may be either translations from Spanish or high frequency habitual patterns conditioned by the input. If they are included in the analysis, the best statement about wh- questions that can be made is that they appear in both the inverted and uninverted forms from the very beginning.

2. The input to the learner for wh- questions is likely to be both inverted and uninverted such that the learner does not differentiate between simple and embedded wh- questions at the outset.

3. If is (cop) wh- questions are eliminated from the data and simple and embedded wh- questions are regarded as a single input pool to the learner, a two-stage developmental pattern evolves. In stage I the learner does not differentiate between simple and embedded wh- questions. This stage can be described as having three periods. In period "a" both simple and embedded wh- questions are uninverted. In period "b" simple wh- questions are sometimes inverted and sometimes not. Period "c" is characterized by increasing inversion in wh- questions with inversions being extended to embedded questions. In Stage II the learner differentiates between simple and embedded wh- questions such that he inverts at least 80% of the time in simple wh- questions and does not invert in wh- embeddings.

4. There is a Stage C "look" in three of the subjects. But the yes/no questions which are inverted prior to inversion in wh- questions, are with the auxiliary do. We speculate that do may simply be a question marker, a prefabricated routine, or a production pattern observed in the input. Excluding "do question markers" as inversion, then two stages emerge in the development of yes/no questions:

i) sentence with rising intonation;

ii) inversion -- gradually increasing but with variability.

The Auxiliary

Our goal in this section is to describe the acquisition of the English auxiliary. The auxiliary system occupies a crucial position in English grammar. It provides the means for the expression of negation and interrogation and less frequently, for the expression of emphasis. Auxiliaries generally carry semantic information and also mark tense and number. Their essential systematicity and their indispensability in the functioning of the English verb make the study of their development an essential focus.

Kyprictaki (1974) examined the acquisition of the auxiliary by children acquiring English as a first language. First, she wanted to see whether a child who had learned the negative question transformation could apply it to any auxiliary configuration which he knew in the positive statement form. Using a repetition exercise involving statements, questions and negative questions, she found that the transformational rules are not globally learned and applied. A child might get all three forms correct (or incorrect), only two correct, or only one correct. Second, she was interested in a controversy within transformational grammar about whether statements or questions are the underlying form in English. The results were not conclusive, but indicated that if a subject got only one form correct, that form was not more likely to be a question than a statement. However, this superior performance on questions was only by a small margin. Finally, Kyprictaki attempted to determine the order of appearance and the development of the auxiliary. This data is still being analyzed.

The morpheme studies done on first language acquisition (Brown, 1973; deVilliers, 1972) consider some of the auxiliary forms which we also examined -- the copula and the present progressive auxiliaries. The most general finding was that the copula was acquired before the present progressive auxiliary. Each of these has three forms -- am, are and is, and no clear acquisition order emerged for them. In studies of second language acquisition, Hakuta (1974) and Dulay and Burt (1974) both also found that the copula was acquired before the auxiliary.

We will describe the development of the auxiliary as it appears in the declarative, negative and interrogative utterances of our subjects. Finally, an overall picture of auxiliary development will be presented by combining these categories. Throughout our discussion we will be speaking only about the order of appearance of auxiliaries, not their order of acquisition. This is an important distinction. Our analysis answers the question of whether or not a particular auxiliary is present in obligatory context. It does not speak to the issue of whether or not the auxiliary is

correctly inflected (in number and tense) in that context. Thus, if a subject were to say they is here, he would be given credit for having supplied the copula is. If he were to say they here, he would be scored "-are, copula". Hence what we will present is a "there-not there" analysis, not a "correct-incorrect" analysis. Future analyses may well include scoring for tense and number. Both analyses would then allow us to talk about order of acquisition.

To determine the order of appearance of the auxiliary in declarative utterances we established the following criterion: to say that an auxiliary has appeared it must be supplied at least 80% of the time in three consecutive samples and in each sample there must be at least two instances of the particular auxiliary under consideration with a total of ten or more auxiliaries in the sample. In scoring models where obligatory context cannot easily be determined we simply considered an auxiliary to have appeared when it was present at least twice in three successive samples.

For each auxiliary in each sample, a ratio was constructed in which the denominator contained the total possibilities for a particular auxiliary to appear and the numerator contained the actual number of times the particular auxiliary did appear. For example, if a subject in some sample had the following two sentences,

He going;
He is playing baseball,

the ratio 1/2 would be constructed to indicate that out of two obligatory contexts the subject supplied the auxiliary, is, only once. In the tables that follow (8, 9, 10) the auxiliaries achieved 80% criterion in the order presented.

The auxiliary in declaratives. The auxiliary in declaratives includes such forms as She was here yesterday and He is going to the store. On the basis of the criteria cited above, the following order of appearance was found in the declaratives (Table 8). From these results we can make the generalization that is (can) and can appear very early and in that order. Beyond these two auxiliaries, the order of appearance seems to be quite variable.

The auxiliary in the negative. When determining the appearance order for auxiliaries in negatives we used the same criterion as we did for declaratives. An auxiliary was scored as "present" whether or not it was correctly formed with regard to the position of the negative particle. Thus, He can't go and the less frequent He no can go were both credited for having the auxiliary can present. This analysis resulted in the orders of appearance displayed in Table 9.

Table 8

Appearance Order for Adjectives in the Declension for each Gender:

Masculine

la [sing]	la [sing]
nan	nan
la [pl]	nan [sing]
an [pl], ara [sing], will	
nan [sing], ara [pl]	
could	

Feminine

la [sing]	la [sing], an [pl]
nan, ara [sing], ara [pl], nan [sing]	nan
la [pl]	nan [sing]
nara [sing]	ara [sing]
would	nan [pl], will
nara [pl], an [pl], will	la [pl]
have	an [sing]

Neuter

la [sing], an [sing], ara [sing], nan [sing], an [pl]
la [pl], will
nan, could
nara [sing], ara [pl], nan [pl]
would

Adverbs

la [sing]
an [sing]
ara [sing]

[illegible]

[illegible]

[illegible]

[illegible] [illegible] [illegible] [

Table 21

Abbreviations used for description of characteristics for plant varieties

Barley

Bar Hooded
Bl
Hood Bl Hooded
Wild Absent

Oats

Ot Husk
Hull

Maize

Mz Pericarp
Pericarp
Pericarp
Pericarp
Pericarp

Potatoes

Pot Tuber
Tuber
Tuber
Tuber Tuber, shape Tuber

Rice

Rice Husk

In yes/no questions an acquisition sequence was also observable, after the exclusion of the early do inversion (considered to be an "inversion-look"):

i. sentence with rising intonation

ii. some inversion, gradually increasing, but with variability from session to session.

Auxiliary. In analyzing the development of the auxiliary, we determined an order of appearance, not an order of acquisition. Our analysis was designed to reveal whether or not an auxiliary was present in obligatory contexts, but not whether it was appropriately inflected for number and tense. Thus, we were concerned with which auxiliaries were used, but not with whether they were necessarily the form of the auxiliary which would be supplied in well-formed English. An auxiliary was said to have appeared if it was supplied at least 80% of the time in three consecutive samples in which there were at least two instances of the particular auxiliary and a total of ten or more auxiliaries in the sample.

The major finding of this analysis was that is (cop) is acquired first, universally, and do and can are the other two auxiliaries that appear early for most of the subjects. Beyond that, there is extreme variability in the order in which the other auxiliaries appeared for each subject. When the auxiliaries were rank ordered in terms of the order of appearance, the orders were not correlated ($p > .90$) using the Kendall Correlation of Concordance W.

Discussion

In this section we will attempt to see how our data speaks to the issues raised in the beginning of this report:

1. the similarities and differences between first and second language acquisition

2. differences between child, adolescent and adult second language acquisition.

Second language acquisition vs. first language acquisition

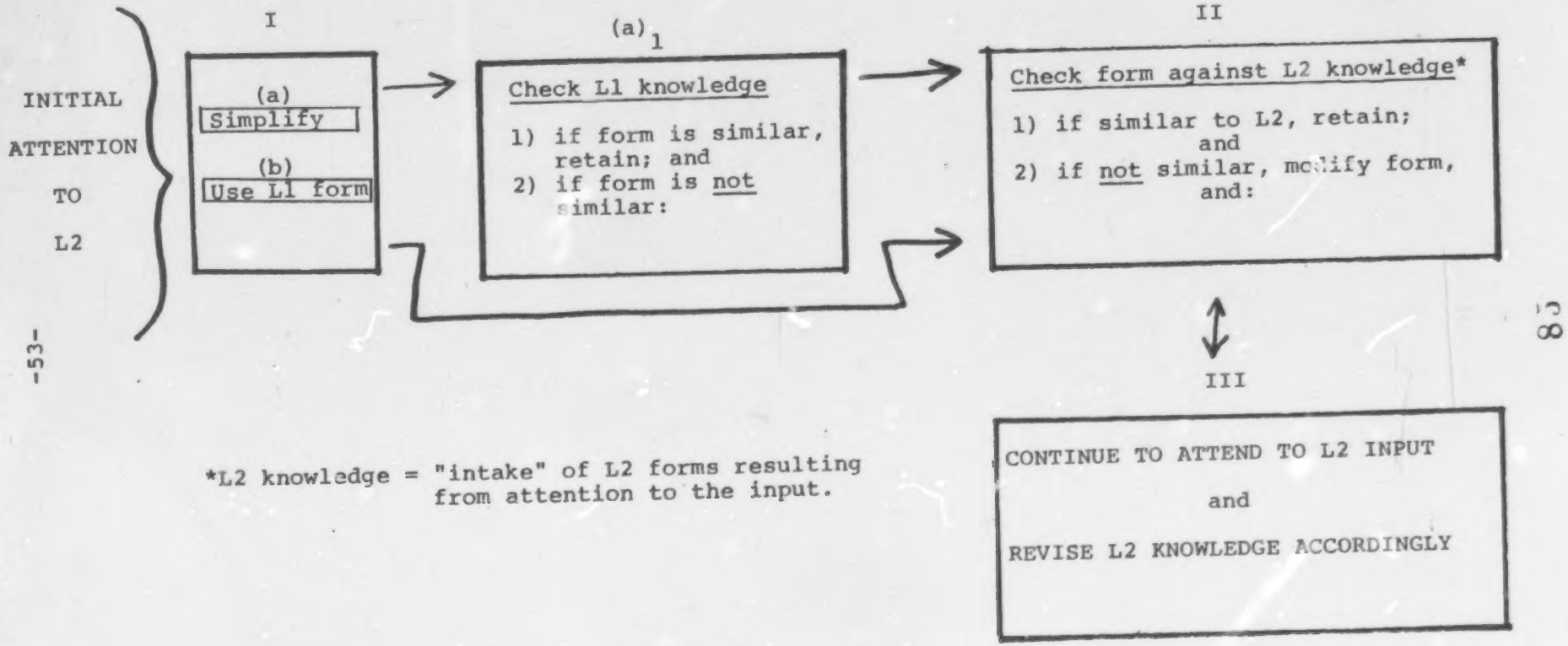
Figure 12 presents a schema which describes the acquisition sequences which were found in our data. The negative, for example, fits into the schema in the following way. The learner's initial attention to L2 data indicates to him that the word, no is used in English. He hears it in such constructions as Are you going to school? No., or No, I'm not.. In the first box I we see that the learner will either simplify the L2 form or use his L1 form. Since no is the uniform negator in Spanish, his first attempt at English negation would be no + V as in, I no go.. Moving on to box II, the learner checks the no V form against his knowledge of L2 at that point in his development. When his awareness of L2 also includes don't V, no V is no longer exactly similar to his conception of L2 and don't V is added to his English negation repertoire. Moving on to box III, he continues to attend to L2 input and revises his English negation system to include aux-neg and analyzed don't. As these new negating devices are acquired they fulfill the functions that no V once served and no V is eventually abandoned.

With wh- questions (excluding wh-word + is (cop) forms) the learner is exposed to inverted (simple) and uninverted (embedded) forms. As indicated in box I, the learner either simplifies or use the L1 form. In this case we see him simplifying by choosing the uninverted form and initially using that exclusively. As a result, in the very beginning his embedded wh- questions are all correct (I know where he is going) and his simple wh- questions are all incorrect (Where he is going?).

Moving on to box $I(a)_1$, he checks the uninverted form with his L1 knowledge and sees that it is not similar to the most frequent Spanish form which has the subject noun phrase and main verb inverted (Cuando viene Juan?). The learner then checks the uninverted wh- question form against his current L2 knowledge. He sees that the uninverted form is sometimes used (embeddings) while other times the inverted form is

Figure 12

A schema of the second language acquisition process



*L2 knowledge = "intake" of L2 forms resulting from attention to the input.

used (simple wh- questions). He then retains the uninverted form but also adopts the inverted form and alternates between the two as indicated in box III, the learner continues to attend to L2 input and revises his L2 knowledge accordingly. He becomes sensitive to the fact that simple wh- questions are the more frequent forms in English and begins to use this form for embedded questions as well, which then appear as incorrect (I know where is he going.). Finally, the learner distinguishes between simple and embedded wh- questions and correctly inverts in the former and not in the latter.

With is (cop) wh- questions, the learner is once again exposed to inverted wh- questions (Where is the book?) and uninverted (I know where the book is?). He checks these forms against his L1 knowledge and finds that the inverted form matches the Spanish equivalent almost exactly. He therefore inverts in both simple and embedded wh- questions. The simple forms emerge as correct while the embedded forms appear as incorrect. Moving to box II, he checks this inverted form against his L2 knowledge and begins to notice some uninverted "wh-word, is (cop)" forms from embedded questions in the input. He then occasionally produces uninverted embedded questions with is (cop). Finally, continuing to attend to L2 input (box III) he learns to distinguish between simple and embedded is (cop) wh- questions, and once again uses the inverted form in the former but not in the latter.

The above model and descriptions attempt to account for second language acquisition. First language acquisition would differ in the following ways: (1) there is no influence from a prior L1; and (2) the simplifications that occur may be similar in form to those that occur in first language acquisition but they may be motivated differently. First language learners may be forced to simplify due to constraints of cognitive development and second language learners may simplify as strategies of communication.

Child vs. adolescent vs. adult second language acquisition. If we consider the linguistic development of all six subjects on three linguistic items (auxiliaries, negatives and interrogatives) examined in this study, and attempt to rank the subjects developmentally in terms of their linguistic progress in each area, an order among subjects does appear.

In determining linguistic progress in the auxiliary, a simple count of the number of different auxiliaries which appeared (80% when required, 3 consecutive samples) over the time the subjects were observed serves as a measure. Table 13 below indicates the number of auxiliaries acquired by each subject.

Table 13

Number of different auxiliaries acquired by each subject

Subjects	Number of Different Auxiliaries
Alberto	4
Cheo	4
Marta	11
Jorge	12
Dolores	17
Juan	18

In determining relative developmental growth in the acquisition of the negative, the measure used is the number of months the subject retained no V as a negating device. Table 14 below shows the number of months each subject retained no V from the time we began collecting our data.

Table 14

Number of months each subject retained no V as a negation device

Subjects	Number of months no V retained
Alberto	9 (entire time)
Cheo	9
Marta	7
Jorge	7
Juan	3
Dolores	0

In establishing the relative linguistic growth for our subjects in the interrogative, the developmental stages achieved in wh- questions were a gauge of their development. Table 15 indicates which interrogative stages the subjects reached.

Table 15

Highest interrogative stage attained by each subject

Subjects	Highest interrogative stage attained
Alberto	Ia
Cheo	Ib
Marta	Ib
Jorge	Ic
Juan	II
Dolores	Ic

These rankings are combined in Table 16.

Table 16

Rank orderings of the subjects' linguistic progress in the Acquisition of the auxiliary, negative and interrogative

Linguistic Items	Alberto	Cheo	Marta	Jorge	Juan	Dolores
Auxiliary	1	1	2	3	5	6
Negative	1	2	3	3	4	5
Interrogative	1	2	3	4	6	5

Looking at these three orderings it is difficult to make any statements about age differences in either rate or extent of learning. We don't see any age group (children, adolescents or adults) consistently doing better or worse than any other. We can ask who was the "best" learner. In terms of the negative, Dolores would appear to be the "best". However, as was noted earlier, Dolores had had a good deal of English instruction in her native country, had been studying English on her own while in the United States and in general knew more English at the beginning of the study than she let on. If we eliminate her from consideration then Juan was the best learner of the negative because he abandoned the no V strategy earlier than the other subjects.

For the interrogative, in wh- questions Juan also appears to have been the "best" learner because he went through more stages than the other subjects. And for auxiliaries Juan is once again the "best". More auxiliaries appeared in his speech than in that of the other subjects.

Juan's superior performance might be explained by the fact that he was old enough so that his learning was not constrained by language-related cognitive development, and he was young enough so that whatever constraints are connected with puberty were not yet in effect. Therefore on the basis of this very limited evidence it would appear that the best age for second language acquisition might be between 7 and 11.

Although our data does not allow us to make statements about whether or not there is a fundamental change in the language learning process at some point in the course of maturation this issue continues to be one of the most important in the field. We have already referred to the work by Krashen, in this area. More recently Krashen (1973), in press) has been examining the issue. In addition, Schumann (1975) using Alberto, one of our adult subjects, as a case study explores some of the age-related issues.

Conclusion: Directions for the Future

The investment in improved language comprehension systems and more research remains apparent. It is therefore obvious that in order to make more accurate predictions about how a natural language is learned, a great deal more must be known about the natural language learner as well as about the interaction produced. The following learner variables must be considered.

Age Factor Variables	Cognitive Processes	Affective Processes
1. Accultur-	1. Memorization	1. Motivation
2. Acculturation and Assimilation	2. Inferencing	2. Inhibition
3. Hypo-pituitarism	3. Inferencing	3. Empathy/Ego
	4. Analogy	4. Risk-taking
	5. Using Memory	
Note:	Note:	Note:

In the first box are what have been called affective variables which are the ones we discussed at length in terms of learning and which, in a large degree, determine the outcome of the learning. The second box lists the cognitive capacities that the learner performs on the target language input data. The third box supplements the interactive nature of these operations in terms of the particular orientation. Inside the learner lies what he brings to bear the target language. We considered these in more detail in the previous section.

The Linguistic Product

The main emphasis in current research in second language acquisition is on the third box. The linguistic product of the learning process. In various ways, current research describes the learner's interlanguage and, on the basis of such data, infers, hidden influences about the competence of acquisition, the nature of the learner's interlanguage and the nature of the learning process. This product level research seems to fall into three general categories: developmental studies (Dulay and Burt, 1973, 1974; Bailey, Madden and Krashen, in press; Andersen, 1975; and Larsen, 1975); analytical studies (Wagner-Gough and Hatch and Gat studies on T.V.S.O.V.) and the comparative

[illegible] and analysis of agency-to-student action environmental [illegible], Baltimore, Maryland, 1973).

Most of the available studies have used the Classroom Human Relations (CHR) index as the measure of an environment's [illegible]. Among numerous other things, one of the findings that have surfaced using this measure is that [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

Smalley, 1972; Nida, 1957-1958) are such factors as culture shock and culture stress; these can be defined as anxiety resulting from the disorientation encountered upon entering a new culture. A person entering a new culture brings with him a repertoire of problem-solving and coping mechanisms. But these mechanisms often do not fit. When they are used, they do not get the accustomed results. This condition can produce fear, anxiety and depression. While the extreme symptoms of culture shock may pass relatively quickly, as ways of coping with the new environment are learned, more subtle problems may persist and produce stress that can last for months or even years. Depending on how such issues are resolved, the learner may or may not acquire the target language.

Attitude and motivational factors are involved in Gardner and Lambert's (1972) distinction between instrumental and integrative orientations. An integratively oriented learner is interested in acquiring the second language in order to meet and communicate with valued members of the target language community. A learner with an instrumental orientation is one who has little interest in the people who speak the target language, but nevertheless wants to learn the language for more self-oriented and utilitarian reasons, such as getting ahead in one's occupation or gaining recognition from one's own membership group. The learner's motivational orientation appears to be a powerful determinant of the extent to which he becomes bilingual.

A third possible initiating factor is the concept of ego-permeability. Alexander Guiora (1972) has proposed a psychological construct, "language ego", which he sees as similar to the Freudian notion of body ego. Development of body ego is a maturational process in which the child gradually acquires a body image, becomes aware of his physical boundaries, and is thus able to distinguish himself from the object world around him. Guiora sees language ego as the development of language boundaries. In the course of general ego development the lexis, syntax, morphology, and phonology of the individual's language acquire physical outlines and firm boundaries. In the early formative stages of ego development the language boundaries fluctuate, but once ego development is completed, the permeability of ego boundaries is sharply restricted.

Guiora considers lowering of inhibition as a way of inducing ego permeability. In an experiment conducted at the University of Michigan (Guiora et al., 1972) he found that the consumption of small amounts of alcohol improved the subject's pronunciation of a second language. He views the

lowering of inhibitions via alcohol as a means of "operationally inducing a state of greater permeability of ego boundaries or the ability to partially and temporarily give up one's separateness of identity" (p. 427). Hence another factor related to whether or not a learner becomes a bilingual is the relative rigidity of his ego boundaries.

It is essential that future research in second language acquisition take these affective factors into account and attempt to relate them to both cognitive processes and the linguistic product. This would involve a systematic assessment of the learner's attitude and motivational orientations, ego-permeability and degree of acculturation. For the first two factors (attitude and motivation) there are ample prototypes in the literature on which assessment instruments for second language acquisition research could be based. The measurement of ego-permeability and acculturation may require the construction of new instruments.

In sum, to get a more global look at the learner we need to know more about the acquisition of morphology, syntax, phonology and vocabulary. In addition, numerous issues concerning the cognitive processes underlying second language learning will have to be explored both indirectly by examining the linguistic product of the learning process and directly by assessing the learners on various measures of cognitive performance and cognitive development. Finally, measures of acculturation, attitude, motivation and ego-permeability must be related to cognitive processes and the linguistic product.

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[illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [

Problem 3:

(बहुविकल्पीय प्रश्न)

(1) [illegible]

(2) [illegible]

(3) [illegible]

(4) [illegible]

(5) [illegible]

Appendix B3

Contacts in the Academic Community

Ann Dow, Director
ESL Program for Harvard Students
Harvard University

Dr. Robert Saitz, Director
ESL Program for B.U. Students
Boston University

Dr. Francine Stieglitz, Director
Teacher Corps Program
Boston University

Lucia David
Institute for Learning and Teaching
University of Massachusetts, Boston

Mrs. Christine Connell
Peabody Terrace Nursery School
900 Memorial Drive
Cambridge, Massachusetts

Dr. Martinez-Bernal
Dept. of Romance Languages
Tufts University
Medford, Massachusetts

Mrs. Vivian Katz
Director, Host Family Program
Harvard University

Appendix C1

Subject Consent Form

(originally typed on Harvard University letterhead)

31 Octobre, 1973

Un grupo de investigadores de la Escuela de Educación de la Universidad de Harvard está estudiando el proceso por el cual personas de diferentes edades aprenden el idioma inglés como su segunda lengua. Al respecto, nos gustaría hablra con usted dos veces por mes durante 10 meses. Estas conversaciones seran brabadas, usualmente con grabadoras audio y de vez en cuando con grabadoras audiovisuales. Considerando el valioso tiempo que nos esta brindando, remuneraremos estas visitas cada mes.

Le aseguramos que no revelaremos su identidad en ningún reporte de esta investigación, sino que usaremos un seudónimo. El material audiovisual solo se utilizará para propositos de nuestra investigación. Para su seguridad, toda la información será tratada con absoluta confidencialidad. Le agradecemos mucho su participación, y le pedimos que firme esta forma de consentimiento.

Courtney B. Cazden
Professora de Educacion

Acepto la participación (de) _____
en esta investigación sobre aprendizaje de idiomas como segunda lengua, en los términos señalados anteriormente.

_____

Appendix C2

English Translation of Subject Consent Form

October 31, 1973

A small research group at the Harvard Graduate School of Education is hoping to learn more about how people of different ages learn to speak English as a second language. We would like to talk with you about twice a month for about ten months. We will tape record these conversations, usually with audio tape recorders, and sometimes with video tape-recorders. Because we are asking for your time, we will pay you each month for these visits.

We assure you that in any written reports of this research we will never use your real name, only a pseudonym. We will videotape material only for purposes of the research. Your privacy will be respected at all times.

We are grateful for your participation and ask that you sign the consent form below.

Courtney B. Cazden
Professor of Education

I consent to participate in the research project on second language acquisition on the above terms. I consent (for) _____ to participate in the research project on second language acquisition on the above terms.

_____

Appendix D

Job Description for Transcribers

A research group under the direction of Dr. Courtney Cazden at Harvard Graduate School of Education is undertaking a ten-month longitudinal study of second language acquisition by native speakers of Spanish.

The purpose of the study is to determine the natural sequence of language acquisition and ultimately to use this information for the development of English curricula more effective and more appropriate for Spanish speakers. Native Spanish speaking subjects from the following age groups are being studied:

Adults, 18 years or over

Adolescents, 11-14 years

Children, 4-6 years

Spanish-English bilinguals are need to work as transcribers. S/he must be able to speak, read and write Spanish and English fluently. Work load will average 10 hours per week. Duties involve attending, taping and transcribing interviews with subjects. Therefore, a person with a flexible schedule is required. Interested persons please contact Dr. Courtney Cazden, or Herlinda Cancino at 495-3524.

Appendix E

Summary of Scores for Bilingual Syntax Measure Protocols

	Dolores	Alberto	Juan	Jorge
Response Value	211	74	92	54
Developed Value	336	114	124	87
Proficiency Score	89	63	70	62
Proficiency Level	5	3	4	3
Functor Ratios:				
1. Present Progressive (V-ing)	3.5/4	2/5	1/5	---
2. Regular plural (N-s)	4/5	1/1	2/2	1/1
3. Irregular past	2/2	0/2	1/1	---
4. Possessive (N-s)	2/3	0/3	1/3	---
5. Article (a, the)	17/17	2/4	6/9	4/6
6. 3rd present indicative (V-s)	3/3	0/2	0/1	---
7. Singular copula {NP+be+(NP / Adj)}	7/7	1/3	2/2	6/6
8. Singular aux ((NP)+be+V)	2.5/3	0/1	2/5	---
9. Regular past (V-ed)	2/2	---	---	---
10. Possessive pronoun (his,hers)	---	---	---	1/1
11.*Pronoun case	18/18	7/7	11/11	3/3
12.*Pronoun gender	22/22	4/4	11/12	2/2
13.*Pronoun number	23/23	7/7	11/12	3/3
14. Long plurals (N-es)	5/7	---	---	---
15. Irregular plural	---	---	0/1	0/2
16. Plural copula or aux	4/4	---	---	---
17. Conditional modal (would)	1.5/2	---	---	---
18. Aux (would+have+V-en)	0/2	---	---	---
19. Past participle (V-en)	1/3	---	---	---

*Functors 11, 12 and 13 refer mostly to be. As this may be misleading, one could use an equal number of occasions for all pronouns in the analysis.